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Fir-Tex Insulating Board Co. Opens New Plant

National and State Executives and Other Representative Men Attend Formal Opening At St. Helens, Ore., of Unusual New Mill Which Is To Make Insulating Board From Douglas Fir Waste—Plant Is Constructed At Cost of $2,500,000 Under Supervision of A. E. Millington and His Son

[FROM OUR REGULAR CORRESPONDENT]

ST. HELENS, Ore., Aug. 8, 1930.—When the formal opening of the Fir-Tex Insulating Board company was celebrated in St. Helens, Ore., August 5, the event marked an outstanding page in scientific achievement and in western industrial progress. Four years ago Fir-Tex was an uncoined word because the process it identifies was in the experimental stage, yet its rapid and successful development constitues one of the romances of modern business.

A. E. Millington and his son, C. A. Millington, acted as hosts to the throng who visited the plant from all parts of the Northwest, for it was through the experience, inventive genius and persistent effort of these two men that Fir-Tex manufacture was achieved.

Distinguished Guest Present

A special train was run from Portland which included among its passengers who were to be guests of the Fir-Tex company such notables as Governor Norblad, Senator McNary, Willis C. Hawley and Franklin F. Korell, Oregon congressmen, Mayor Baker, chamber of commerce officials and railroad officials. From other cities and towns automobile caravans arrived to take part in this event.

In 1926 the Millingtons had an idea which they believed would result in the utilization of Douglas fir waste, and in order to test this idea by careful experiments they retired to a seclusive spot in California. After months of effort they saw their vision had practicability and industrial worth. During May, 1928 they had interested capitalists of the Northwest in their project to such an extent that an incorporation was formed and offices established in Portland. Complete financing of the company had been achieved about a year later and in less than another twelve months the big plant was under production.

The Fir-Tex Insulating Board company did not spend a dime nor start construction until every share of stock necessary to its financing had been subscribed and paid for. There is now no stock to sell the public, there is plenty of working capital and no debts.

Last Word in Modern Construction

The Fir-Tex plant is the last word in modern construction suitable for the purpose to which it was designed, including in its building materials, steel, brick, tile and fire-proof sash. It is built to operate on a straight line of production from the water end of the dock where chips are unloaded from barges to the finishing room where the product is either stored after completion or loaded on cars that are run into the building to a depressed track for shipment immediately.

The dock is a quarter of a mile long and the main building unit, which includes everything except the boiler house and laboratory, is also a quarter of a mile, making half a mile of continuous buildings to house the processes. The chips from Columbia river sawmills are taken from the barges and carried to the digester building storage where the chips are processed in six 18-foot Biggs rotary boilers, the fiber being run through hammer shredders and run into storage chests ready to run over the Fourdriner which has a wire 13 feet wide and 100 feet long and turns out a board 12 feet wide of one inch thickness semi-laminated, super-rigid insulating material.

The drier, also 13-foot is 360 feet long and has 8 decks. The finished sheet is cut into 4-foot squares and packed in cartons holding six sheets or 96 square feet. The Fir-Tex plant will have its entire roof of one-quarter mile insulated with its own product.

The Boiler Plant

The boiler plant comprises 500 H.P. boilers and a notable feature is the 250-foot white smokestack which towers as a landmark visible for many miles. The company burns oil for fuel as all the wood material coming to the plant is necessary for production material. A 50,000-gallon steel water tower and two fuel-oil tanks are also included in the plant ensemble the site of which comprises six acres.

Three great retorts supply the heat blasts to the driers through a process of guaged temperatures that permit thorough extraction of moisture.

The plant is capable of producing 150,000 square feet of Fir-Tex every 24 hours, which is more than present needs, according to J. H. Burnside, sales manager for the company, but so encouraging does the market for this product appear, that plans are already being considered for expansion which may even develop into eight units that would have a possible capacity of 1,500,000 board feet a day.

Continental Industrial Engineers, Inc., Chicago, installed the three retorts capable of delivering a normal load of 15,000,000 heat units per hour from each individual furnace. Each is 17 feet high, 29 feet wide and 25 feet long, oil burning, with a capacity of 150 gallons of oil per hour. The heating plant furnishes heat to evaporate 360 tons of water per day.

(Continued on page 42)

Philadelphia Paper Trade Gradually Reviving

Demand for Wrappings and Other Grades of Coarse Paper Most Marked — Seasonally Active Specialties Are Moving In Large Volume—Despite Livelier Trading, Southern Kraft Quotations Have Declined to Former Low Levels of Spring

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 11, 1930.—Though the torrid temperature has driven many executives to seashore or mountain resorts there has been a worth while business left to those who have stuck at their posts. This growing revival of business is the most comforting factor in the sizzling dog days and those paper men who have been engaged in meeting the boarding demand are quite optimistic of the future. Demand for wrapping paper and allied lines of coarse grades is most marked while seasonally active specialties are being shipped in large volume. Wrapping paper used by the textile trade shows the upward trend anticipated in that long dormant industry and many specialties that are in use where textiles are produced have come back into favor.

While demand is picking up prices of some grades of paper have again become disturbing. On August 8 there was announced to the Philadelphia trade a reduction in the price of southern kraft to the low levels of springtime. The prices of southern kraft were announced as 3½ per pound in rolls or $70 per ton and $75 per ton in sheets f. o. b. mills to Philadelphia.

Sheathing papers have been reduced $5 per ton while sulphite manilas are down ½ cent per pound in such grades as are used by converters for envelopes, and like products while a limited amount of those grades used for wrapping are also affected.

Twines Unsteady

Twines, despite factors and conditions that should be instrumental in raising values, are subjected to keen competition owing to efforts of manufacturers and distributors to unload stocks on hand. There has been much dumping of hemp in the country owing to unsettlement in India and despite the prospects that jute crops will be short there has been a low price asked for the imported raw materials and manufacturers have followed suit as well as distributors in cutting prices to meet competition. Apparently prices are being sacrificed to obtain funds on stale stocks or slow moving goods in both cotton and jute twines as well as sisal products. Any dealer who will buy under speedy delivery terms is able to obtain twines at attractive quotations. Despite these paradoxical conditions in the twine market it is believed that prices will rise this Fall as both hemp and cotton crops will be short and present sacrificing is believed to be due to urgent needs for funds.

Water Shortage Closes Mills

Although not serious affecting the manufacture of paper this season owing to limitation of demand so far this summer, shortage of water has caused the shut down of several mills along the Schuylkill and in those sections of the State where the supply is received from streams leading directly into the larger bodies of rivers nearby which have been subjected to the damaging droughts of the past few weeks. Mills along the Schuylkill River and in the Up State territory where tributaries are connected with the larger body of water supply have been obliged to close down either through low water or by order of the companies controlling the water supply and its distribution as a public utility. Unless order of the Schuykill Navigation Company which controls the canal that leads directly through the Schuylkill dam at Flat Rock in the Manayunk section of Philadelphia, the paper mills that abound the banks have been closed to prevent acute shortage of supply. The mills all along the canal have been placed under order of closing and among them two of the more prominent paper manufacturers of the section, those of the plants of the McDowell Paper Mills, owned by Charles McDowell, which have been in operation for more than a century and the paper board mills and container plant of the Container Corporation of America just a short distance away. The order to close was received last Thursday and will be effective until Monday of this week provided a heavy rain does not intervene to replenish the extremely reduced low water supply that now exists. The Flat Rock Dam is almost dry as a result of the prolonged drought, and unless there is a good rain soon the mills will be in precarious condition.

Tide Water Mills Continue Operations

While reports of low water supply retarding paper manufacture emanate from the interior of the State and the mills along the streams dependent upon power from such sources are many, the present drought does not in any way affect the manufacturers who have plants along the Delaware in the Keystone State, Delaware State, or in New Jersey, where tide-water keeps the ebb and flow at normal supply. While these mills along the Delaware are not affected by low water they are confined to a 4½ day week under the present dull trend of summer operation. Those mills along the Delaware not affected by water recessions in the immediate vicinity of Philadelphia are the Keikhefer Container Corporation, the Hinde and Dauche Company, Lang Paper Company, McAndrews and Forbes, and the Pinco Papers, Inc., of Camden.

Mather Paper Company Moves

The Mather Paper Company, formerly located at 937 North Front street, has removed to the first and second floors of the Merchants Warehouse Building, located at 611 South Front street. The Mather Paper Company will occupy the floors for officers and warehousing under the same terms of co-operative warehousing which has been arranged by the Associated Groceries Manufacturers of America which has taken over two warehouses for the purpose of economy to its members in their warehouse facilities and cost of maintaining storage space. The other warehouse is the Terminal Building at 800 North Delaware avenue. The Mather Paper Company has long been established as a wrapping paper, bag and grocery specialty house with the head of the firm Charles Mather at the helm of its business. Its proprietor formerly was an associate of the old firm of Shuttleworth, Hogg and Mather, dissolved, and upon its dissolution the present head of the Mather company formed his own business dealing in the same lines as the older concern.

W. S. Wilcox Abroad

W. S. Wilcox, head of the Wilcox, Walter, Furlong Company, 19 South 6th street accompanied by Mrs. Wilcox, is spending the summer months in Europe. Mr. Wilcox, senior member of the fine paper firm, is also president of the Philadelphia Paper Trade Association.

Paper Mill Superintendent Fined

Samuel Lopin, who is secretary and superintendent of the Mazer Paper Mills, Inc. of Lansdowne, near Philadelphia, was fined $400 by Justice of the Peace Mcleary, of Upper Darby, last week, for alleged failure to comply with working women employment laws. The mill supervisor was charged with employment of women for sixty-five hours per week instead of the legal limit of fifty-four, Superintendent Lopin when arraigned before

the magistrate attempted to debate the law but pleaded guilty when threatened with an $800 fine.

Paper Concerns to Occupy Warehouse

Following the announcement of the Associated Groceries Manufacturers of Ameriea, of the plans to concentrate warehousing facilities on two of the largest of Philadelphia terminals under group warehousing provisions for the members it was stated that several paper concerns will occupy the Terminal Warehouse Building, located at Delaware Avenue and Brown street, in arrangement with the body. These concerns cater largely to food industries in both wrapping paper, bags, and in supplies for the accounting departments. The Huff Paper Company, which now occupies offices in the Denckla Buildings, will occupy one of the floors in the building for the storage and sale of wrapping papers, bags and others lines of coarser grades of paper, while the Union Bag and Paper Corporation will occupy another for its products. The Sabin Robbins Paper Company occupies one of the buildings in the Terminal Warehouse group for its Philadelphia branch. The Huff Paper Company which formerly occupied the structure as a storage center will combine its sales offices and warehousing facilities in the Terminal Buildings, having abandoned its former plans of removing to the new combination office, sales and shipping structure that now is under way of completion at Broad street and Callowhill which will be known as the Terminal Commerce Building and is under ownership of the same proprietors who control the Terminal Warehouse Building. There will be three other large fine paper dealers removing to the Terminal Commerce Building in the coming Fall. With these changes there will be a wide shifting of the paper centers which have long occupied their present sites.

Morgan H. Thomas Improves

President Morgan H. Thomas, of the Garrett Buchanan Company, 16-20 South 6th street, who has long been confined to his home and recently was removed to Ocean City to recuperate, is now able to be about and is spending one day a week at the office of the company, commuting every Monday to local headquarters from the seashore. President Thomas was confined to the Bryn Mawr Hospital for some time last spring, where he underwent several operations and was removed to his home in early summer.

Kalamazoo Vegetable Parchment Co. Has New Box Line

There is now being introduced to the Philadelphia trade under the local branch of the Kalamazoo Vegetable Parchment Paper Company, in the Drexel Building, a new boxed specialty which has many advantages in conservation of the paper content. The new box line is a 500 sheet packet which is packed in a compact carton of the Kalamazoo Vegetable Parchment Company's parchment bonds for typewriter desks or office desks, where space is limited.

Paper Treks New Summer Specialty

Treks, in the form of paper sandals, that are especially adapted for this time of year sales at summer resorts or in the larger hotels and seashore places as well as at country clubs and swimming pools have been featured by the J. L. N. Smythe Company, 30 South 6th street, which has been campaigning on these latest of converted products throughout the hot weather. Treks are the special mark of the paper sandals put out by the Smythe company and are made under the firm's own designs. They are of two types, reinforced and plain, and in varied sizes. The reinforced are produced in double-ply, strong crepe fiber, soft and pliable with waterproofed center through which water cannot penetrate and in plain kraft water proofed crepe, which are used in locker rooms, baths, gymnasiums, hotels, hospitals and shoe shops. They are accompanied with an attractive metal holder for use in locker rooms and baths and made in grey and crystal finishes. They are produced in men's and women's sizes.

Gift and Art Shows for Late Summer

There will be held in the late summer weeks a series of gift and art shows staged under the auspices of the National Gift and Art Association with headquarters in the Drexel Building, this city. The New York Art Wares National Show will this year be held at the Hotel Pennsylvania from August 18 to 22, while the Philadelphia Gift and Art Show is to be staged at the Hotel Adelphia and the New England National Gift and Art Show to be held at the Copley Plaza Hotel from September 8 to 12. The gift and art shows include exhibits of many lines of paper goods, including papeteries, portfolios, tissues, envelopes, announcements, fancy paper supplies for decorative purposes, party favors, and imported novelties in flat papers, boxed gift and social stationery and many articles which are distributed, manufactured and imported by the concerns participating in the shows. These gift and art shows are featured in various parts of the country in biennial displays to which buyers from department and privately conducted stationery, gift and art and novelty shops come for the purposes of buying stocks for their establishments. Yearly they are becoming more popular as assemblies of the best offerings of manufacturers, distributors and importers of both paper and other gifts adapted for year round or holiday stocking of gift suggestions.

Hinde and Dauche to Build in Baltimore

The Hinde and Dauche Paper Company has arranged to build at 3400 East Biddle street, Baltimore, Md., a new paper box factory double the size of the present plant which was purchased from the J. M. Raffel Company two years ago. This plant will supplant the Raffel Division factory at Fairmount avenue and Haven street, in the Oriole city. The Baltimore plant has been devoted to the manufacture of corrugated containers and products of allied character distributed in the Eastern states and coming under the Philadelphia sales offices in the Drexel Building, which looks after sales of the allied lines of converted products along with other Hinde and Dauche specialties. The new factory will cost more than $200,000 and will be a single story high, but will have 120,000 square feet of floor space with adjacent lands available for still further expansion in the future. The Baltimore plant is under management of Gilbert Rosenau who is district manager of the local corrugated products division of the Hinde and Dauche Company, with headquarters in Sandusky, Ohio. When completed the new plant will be one of the largest south of the Mason and Dixon Line devoted to the manufacture of corrugated products.

S. S. Garrett Returns from New England Tour

Sylvester S. Garrett, head of the firm bearing his name, 259 South 3rd street, is back at his desk following a two weeks sojourn at Milford, Conn., where he visited his mother, Mrs. Elizabeth Garrett, and his sister Mrs. Rosana G. Sellers, wife of the late Philip Sellers, former vice president of the Keystone Paper Products Corporation, of this city, who was killed a year or so ago in an automobile collision, who are now at their summer home in the New England territory.

Buy Illinois Carton & Label Co.

MIDDLETOWN, Ohio, August 11, 1930.—The Gardner & Harvey Company, of Middletown and the Richardson-Taylor Printing Company, of Cincinnati, have jointly purchased the Illinois Carton and Label Company of Chicago, which company was formerly owned by the Illinois Glass Consolidated Corporation, of Alton, Ill.

The Illinois Carton and Label Company are manufacturers of folding paper boxes and labels. The company will be operated under the same management that it has been in the past with A. V. Z. Jennings as sales manager and B. L. Hoffman as plant manager.

The management of the company will be taken over jointly by the interests of the Gardner & Harvey Company and the Richardson-Taylor Printing Company, with R. A. Taylor as president and E. T. Gardner, vice president.

Activities of the Ontario Paper Industry

Alliance Paper Mills, Inc., Announces the Appointment of A. E. Herald Fair as General Superintendent—Canadian Paper Mills Are Manufacturing Lining Paper of Kraft Pulp For Box Makers—More Russian Pulpwood Arrives On St. Lawrence

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., August 11, 1930.—A. E. Herald Fair, native of Midland, Ont., and one of the youngest executives in the industry, has been appointed general superintendent of the Alliance Paper Mills, Ltd., it was announced at the head office of the company in Toronto last week. Mr. Fair is just 31 years of age and has been associated with the paper business since he graduated from the University of Toronto in 1922 with the degree of bachelor of applied science after a chemical engineering course. He then became connected with the old Lincoln Pulp and Paper Company, at Merritton, Ont., and a short time later was appointed superintendent of the Lybster mill of that group at Merritton. In 1926 he went to Cambridge, Mass., to assume charge of the paper mills department of Arthur D. Little Company, Inc., research engineers. He returned to his Lybster mills post under reorganization in 1928. Mr. Fair is a graduate of the Royal Military College of Kingston, having passed through the shortened course which started in 1917, and passed out its pupils in 1918 while the war was still on. He was commissioned with the Canadian Field Artillery and remained until the war closed. A brother, W. J. Arthur Fair, is solicitor of the Attorney General's department in Toronto, and another brother, Norman, is connected with Alliance sales office in Toronto. The new mill manager has a host of friends in the paper industry in Canada who will congratulate him on his rapid rise in the industrial world.

Kraft Pulp Used by Box Makers

A relatively new use for kraft pulp is being developed by paper mills in Canada making kraft pulp and papers, in the way of a lining paper for paper box manufacturers made of kraft pulp, under the name of "Kraft-Liner." By box makers this paper is corrugated and used instead of the usual corrugated paper. So far as Canadian mills are concerned they are just beginning to make the new paper, and box makers are experimenting with it. It has been made more extensively in the United States where it is understood to have established itself to some extent. The merits of a paper made of kraft pulp, for the purpose indicated, and doubtless for any other purposes, are manifest. It is stated to be much stronger, and will add to the efficiency of paper board boxes because of that fact, it is claimed.

News Print and the Australian Budget

Fuller details regarding the Australian budget as it may possibly affect Canadian news print interests are awaited by the Ontario mills, not without a certain amount of anxiety. During the past fiscal year Canada sold to Australian concerns $3,790,108 worth of news print, which was $62,744 more than for the year previous. In the past, Canadian news print has gone into Australia free of duty, whereas the general tariff was three pounds sterling a ton. Customs investigators in Canada interpreted the cables to indicate that $5 a ton has been imposed under the British rate and the same amount under the general rate. With the exception of news print and the fact that imports are to be subject to a primary customs duty of 2½ per cent, Canadian exports to that country do not seem to have been particularly singled out for higher rates.

Presentation to Ex-Superintendent

The Golf Club at St. Catherines, Ont., was the scene of a happy little event a few days ago when C. N. Candee, the retiring superintendent of the Merritton mill of Alliance Paper Mills, Ltd., was tendered a complimentary dinner by the executive staff and other officers of that organization. Geo. W. Pauline, managing director, was in the chair and he was supported by G. E. Fleck, assistant managing director, and G. C. Winlow, sales manager. In the course of the evening Mr. Candee was made the recipient of some handsome pieces of dining room table glassware. Mr. Pauline, in proposing the health of the guest of the evening, expressed the company's regret at the severance of the happy relations that had existed between the superintendent and himself and he assured Mr. Candee of the company's best wishes for his future career. Both Mr. Fleck and Mr. Winlow expressed similar sentiments and in reply the ex-superintendent declared that the years spent with Alliance had been among the happiest in his life. He is taking a position on the technical staff of the Howard Smith Paper Company's laboratory at Montreal.

Russian Pulpwood Arrives in Canada

More Russian pulpwood is arriving in Canada en route to the United States to feed paper mills in that country. One cargo came down the St. Lawrence on the Steamship *Kirsten Mills*. With the American embargo raised, after an investigation by the Washington authorities, the entry of the cargo was not questioned as was that of the cargo brought by the *Fishpool* a short time ago. This latter was held up for several days in the hold of the vessel, owing to the threatened refusal of the United States to allow its importation into that country. Last Sunday, however, the unloading of the pulpwood from the *Fishpool* was commenced at Three Rivers. The amount brought by the *Kirsten Mills* is 42,000 cords which represents a comparatively large cargo. While the *Fishpool's* consignment is being sent to Northern New York by the Canadian National Railways from Sorel, the *Kirsten Mills* will transship her pulpwood into lake boats which will transport it through the canals and lakes as far as Erie, Pa., to be handled eventually by the Pennsylvania Paper Company. When the decision on the part of the United States to allow Russian pulpwood entry was cabled across to the port of origin for all this Russian product, Archangel, two more vessels were enabled to proceed on their journey to Canada with cargos of wood destined for New York state. They sailed from the Russian port on August 2 and will dock this month at Sorel. These are but the first group of sailings in this trade and more are expected to follow later.

Interesting Golf Game in the West

Ontario paper men who take their exercise on the links, and there are many of them, were interested in a friendly golf match that took place a few days ago at Niakwa Golf Course at Winnipeg between W. H. Quinn and E. C. Stovel, representing the publishing fraternity of the West, and Messrs. George Wilson of Clarke Bros. and Roy Ecclestone of the Rolland Paper Company, representing the paper industry. The game resulted in a victory for the paper trade. Mr. Ecclestone played a brilliant game with a 39 out and a 39 in, making a total of 78 gross. This is considered a particularly good score for that course and will make some of the other golfing paper men look to their laurels.

Will Reduce Operations in the Woods

The Canada Power and Paper Corporation, Ottawa-Laurentide Division, has announced that they are contemplating a curtailment of their bush operations during the coming year. This, however,

will not affect the output of their mill at Pembroke, Ont., next season. W. R. Beatty, manager of the company in Pembroke stated that they are withdrawing from the Deux Riviere section entirely this season and that woods activities would be conducted on only 50 per cent of last year's scale. Mr. Beatty added, however, that the company has sufficient logs now on hand to run the Pembroke through the 1931 season and if business conditions show improvement there will be ample time to secure logs for a big cut in 1932. The lumber market has been affected by business conditions and manufacturers are finding sales not as numerous as they should be. While there is no indication that present conditions will be at all permanent, Canada Power and Paper Corporation has decided to curtail operations in the bush especially as there is sufficient supply of logs to ensure a good cut next year. The mill in Pembroke will continue to operate until well on in the fall, as originally planned.

Notes and Jottings of the Trade

It is interesting to note that the Howard Smith Paper Mills, Ltd., who operate one of their mills at Cornwall, Ont., has recently made a beginning in the manufacture of special paper for currency and expects to develop that line of product in order that Canadian paper money may be made on Canadian paper. The company's mills have been making real bonds and ledgers of the highest grade, the bonds being used for stock certificates, bonds and legal papers that must not only be strong and tough but lasting.

Fred W. Halls Paper Company, Ltd., Adelaide street West, Toronto, have just sent out samples of their Royal Record, "a paper of quality, made in Canada," as the announcement reads. Some interesting letterpress on the subject of the history and development of fine paper manufacture accompanies the samples.

American Writing Sales Force Meets

A three day conference of the American Writing Paper Company, Incorporated sales force, held in Holyoke, ended with a golf tournament and banquet at the Mount Tom Golf Club on Saturday, August 2.

The two days previous were devoted to discussion of sales policy and lines, as well as presentation of the Eagle-A advertising program for the ensuing year.

In addressing the sales force at length during the conference President S. L. Willson touched on present business conditions and future prospects. Mr. Willson in part spoke as follows:—

"I believe business conditions will be better before the year is over. I am confident the bottom of our business depression has been reached and that a steady improvement will take place. Above all things be optimistic—spread the gospel of better times—be enthusiastic about your associates, your company, and the product you have to sell, and keep everlastingly on the job."

"The present depression in business is not political in character, it is economic—a natural sequence to an orgy of inflation and expansion. It is world-wide. During the early months in 1929 we were riding on the crest of the industrial wave—today we are at low tide, but as sure as the day follows the night we shall see the business wave of prosperity return with a steady flow towards better business, and I think we are now at the dawn of that new day."

Japanese Mill To Curtail Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 13, 1930.—The leading Japanese paper mills have agreed to curtail their output by 30 per cent for an indefinite period, according to a recent cablegram from Commercial Attache Butts, at Tokyo. No information is available as to the amount of reduction in the various grades. News print paper, however, represents 40 per cent and other printing papers 20 per cent of the total production.

Swedish News Print Production Lower

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 19, 1930.—Production by the Swedish news print mills during the month of May totaled only 13,411 metric tons, a decrease of 3,040 tons under the preceding month and of 6,701 tons under May of last year, according to a report received by the Department of Commerce.

PRES. WILLSON, SALES EXECUTIVES AND BRANCH MANAGERS AMERICAN WRITING PAPER CO., INC.

Menasha Straw Board Plant To Resume Work

Organized to Take Place of Defunct Menasha Paper Mills Co., Menasha Paper Corp. Plans To Install New Power Plant to Effect Operating Economies—W. H. Nelson Elected President, L. J. Knapp, Vice-President and W. H. Reynolds, Sec.-Treas.

APPLETON, Wis., August 11, 1930.—Early resumption of operations will take place at the Menasha Paper Corporation, the new company just organized to take the place of the defunct Menasha Paper Mills Company, Menasha, Wis. The mill will continue to manufacture strawboard.

Stockholders of the new corporation have chosen W. H. Nelson as president of the company, L. J. Knapp is vice-president, and W. H. Reynolds, secretary-treasurer. Mr. Nelson was secretary-treasurer of the former concern and also is secretary of the Menasha Wooden Ware Company. He is directing the organization work.

In order to effect operating economies, the company is to install a complete new power plant, the plans for which are now in preparation. A new rotary room will also be established in quarters formerly used as an office. A building across from the mill will be used as offices.

This mill was purchased by the new owners at a receiver's sale recently. It is equipped with two Fourdriniers trimming 63 and 74 inches and has a capacity of 30 tons daily.

Carton Plants Nearing Completion at Menasha

Construction work has been completed on a third story unit erected above part of the plant of the George Banta Publishing Company, Menasha, Wis. The equipment is now being moved into the new section, thus permitting increased operating space. Work also is progressing rapidly on the remodeling of the former Neenah Shoe Company plant at Menasha, Wis. These buildings are to be used by the newly organized Wisconsin Containers' Corporation. Machinery has been ordered for heavy carton manufacture.

New Filtration Plant Planned

Consideration is being given by the Dells Paper and Pulp Company, Eau Claire, Wis., to the construction of a filtration plant. A purer supply of water is needed for some of the higher grades of paper. Seven thousand dollars had been spent in sinking test wells, and all but two of them showed too high a quantity of iron and manganese. Those which seemed satisfactory were inadequate for a capacity of more than 5,000,000 gallons daily. The only alternative therefore appears to be the filtration plant and the use of water from the Chippewa river. Plans for the plant have been completed and the company is now investigating the cost before proceeding with the work.

News Print Freight Rate Reduction Requested

In an effort to find a market for Wisconsin news print paper in the southeastern states again, the Wisconsin Paper and Pulp Manufacturers Traffic Association has asked the Interstate Commerce Commission to prescribe lower rates. The association, representing 42 mills in Wisconsin, upper Michigan and northern Illinois, asserts that the present rates on news print from these mills are unreasonable, unjust and unduly preferential to New England, New York and Canadian manufacturers.

Wisconsin mills have a combined capacity production of 297,300 tons of paper a year, and the association's brief states that many more would produce news print if they were not shut out of markets by exorbitant freight rates. It is shown, for example, that the freight rate from Carthage, N. Y. to Danville, Va. is 41 cents; from Corinth, N. Y., 47 cents, and from the Fox River Valley of Wisconsin, 57.5 cents. Railroads are now asking that the Corinth rate remain unchanged, that the Carthage rate be increased 10 cents, and that the Fox river rate be increased to 62.5 cents. Decreases ranging from 9 cents to 40 cents are proposed by the Wisconsin traffic association.

A separate brief has been filed on this matter apart from the general rate investigation. It has been proposed also that the "eastern blanket" which takes one rate to central territory be split up. The rate is now 38½ cents to central territory. Wisconsin mills state that they meet their greatest competition in news print shipped from the extreme eastern portion of the blanket and that if it were split up, they might be able better to face this competition.

News of the Industry

Frank B. Whiting, vice-president of the George A. Whiting Paper Company, has been elected to the board of directors of the First National Bank, Menasha, Wis., to fill the vacancy caused by the death of his father, George A. Whiting. This bank was founded by the latter. Carleton R. Smith, of Neenah, Wis., succeeds the late manufacturer as president of the bank.

A compliment to the Flambeau Paper Company, Park Falls, Wis., was paid recently by the *Ashland Daily Press*, Ashland, Wis. A full page advertisement was published announcing that the *Press* was using Flambeau Halftone News Print, the "best news print paper used by any daily newspaper in Wisconsin." The Flambeau mill is in the circulating territory of the *Press*.

A night shift is being considered for the pulp hoist of the Consolidated Water Power and Paper Company at Ashland, Wis. Pulp wood is being rafted across Lake Superior to this point for reloading on freight cars and the supply is coming faster than usual. The company's tug *Butterfield* made the last trip across the lake in nine days with a raft of 12,000 cords and has returned to Edwards Island for another raft.

W. W. Hinnenthal, former manager of the Marinette and Menominee Paper Company, has left Marinette, Wis., for his new duties at Mobile, Ala. He will be general manager of the International Paper company's large new bag factory there. Mr. Hinnenthal intends to go to New York first to confer with officers of the International company.

Officials of Ashland, Sawyer and Price counties were guests of the Nekoosa-Edwards Paper Company, Nekoosa, Wis., recently and were shown the vast reforestation project undertaken by that company. These three counties are considering plans for a tri-county national forest and are being encouraged by the paper company. The visitors learned how tree planting was carried on under a quantity plan with economy.

Further forest lands are also to be acquired by the state of Wisconsin through the Wisconsin Conservation Commission, the first of these to be in the Flambeau River District. Moneys received from forestry taxes are used for this purpose. Because the appropriations are so limited, the commission will ask the next legislature to increase the tax rate.

P. H. Glatfelter To Operate Full Capacity

SPRING GROVE, Pa., August 13, 1930.—The P. H. Glatfelter Company in the heart of Pennsylvania drought district was obliged to curtail production a few days last week. Although no rain has fallen new water sources in the surrounding hills have been opened and developed so that the company will be able to operate full capacity six days during the present week.

Green, Lowe & Dolge, Hammermill Agents

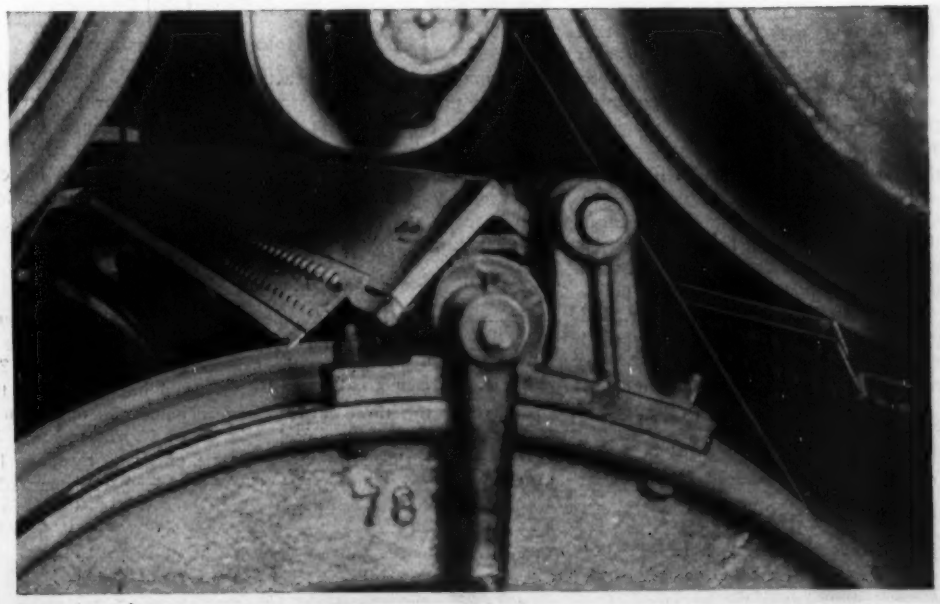
ERIE, Pa., August 11, 1930.—The Hammermill Paper Company announces the appointment of Green, Lowe & Dolge, of New York City and Hartford, Conn., as Hammermill agents.

No insulation on THIS dryer

From this dryer, and hundreds of other dryers, Vickery Doctors take off the insulating film of dirt and fibre as fast as it forms. Vickery Doctors will save heat and improve paper finish in your mill.

Let us prove it, with a trial installation at our expense.

BIRD MACHINERY



The VICKERY DOCTOR

BIRD MACHINE COMPANY
SOUTH WALPOLE, MASSACHUSETTS

4156

Demand For Paper Slightly Better In Chicago

Wholesalers and Distributors of Standard Grades of Paper Urging Buyers to Stock At Prevailing Low Levels—Early Resumption of Active Trading Looked For In Autumn—Book and Cover Papers Steady—News Print Outlook Good

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., August 11, 1930.—Earnest efforts are being made by Chicago paper merchants to introduce additional stimulus in the present retail trade. At the same time wholesalers and distributors in various lines are urging their clients to buy now or in the very near future in the belief that prices are very favorable to them and the outlook good for Fall business. An early resumption of activity in most lines seems called for with reports of somewhat improved conditions. News print, carrying through a hot summer that cut down demand materially, is facing the Fall with a fairly stable market, with inventories in good shape and the outlook rather good. In book and cover papers a steady market has carried through the week with demand going along, at a steady, if somewhat sluggish rate. Fine paper merchants are redoubling their efforts for business and, in many cases, are showing customers how dull seasons may be improved materially by well regulated advertising effort. Waste papers are reported rather active with the higher grades doing well. Krafts are still near the bottom as far as price conditions are concerned and good retail trade should serve to improve the market quite materially.

Seaman Paper Co. Changes

The Seaman Paper Company has sent out to the trade a full announcement concerning the sale of its entire stock of printing and specialty papers to the Whitaker Paper Company and the newspapers here have also carried a story from J. T. Hillyer, manager of the Chicago branch of Whitaker to the effect that service on all stock and mill shipment on all paper merchants lines formerly handled by Seaman will be assumed by Whitaker. A revised catalog will be ready for distribution about September 1. In the meantime buyers may select from any line listed in the present catalog of either company. Until adequate space is acquired the offices and sales force of the consolidated firms will be at 411 West Ontario street. In announcing its sale to the trade the Seaman Paper Company, in a letter signed by George Seaman, president, states that that organization has also disposed of its paper merchant business in Minneapolis, St. Paul, Des Moines, St. Louis and Buffalo and announces a national policy instead of a local policy. Seaman, according to the letter, will act as exclusive paper mill sales agents and manufacturers and will sell all lines of paper to paper merchants, large publishers, converters, etc. On all business that is normally paper merchant business, in the future the Seaman Paper Company will not compete except through recognized paper merchants. The main office of Seaman will remain at 411 West Ontario street with the New York office at 122 East 42nd.

D. F. Peck Advises Paper Merchants

Of unusual interest at this time is a letter, "To the Trade," written by D. F. Peck, of the D. F. Peck Paper Company, president of the Chicago Paper Association. Quoting in part: "The first half of this year has or will have demonstrated who are successful merchants. Any merchant in any line that can show a profit with business below normal is operating under the guidance of a real executive. The conditions prevailing at this time stand for nothing unusual. We are all just a little unreasonable in expectations and a little selfish in our desires. We want to play and still feel we are working. It is not the time nor the country that is wrong. We individuals are just all wrong. We have lost part of our creative genius and now that we have run the length of the beautiful and wide highway we have been traveling for years we blame it on the country and the times. You can predict as much as you wish when good times will return, but you won't be right unless you do your part in action. We believe it is a good time to place orders, whether for present or future delivery, and this is a matter that should be given serious consideration within the next two weeks. Many wide-awake merchants are safeguarding their future sales by contracting now."

Paper Merchants Outing Successful

While the annual outing of the Chicago Paper Association at the Medinah Country Club on July 25 is now past history, members of the association and their guests are still talking about it. An attendance of over fifty golfers and otherwise enjoyed a practice round of golf in the morning, a fine luncheon at noon and the round of "prize golf" in the afternoon. The dinner in the evening was presided over by D. F. Peck, president of the association and it is sufficient to say that "a good time was had by all." A feature event of the day was the work of Mortie Inlander, of Inlander-Steindler, in winning the second leg of the beautiful Crystal Tissue cup. By winning this year and last year with his low gross score Mr. Inlander has only to win next year to retain permanent possession of the trophy. Many other prizes were given out and the entire day from dawn until far into the night was most thoroughly enjoyed by everyone.

Salesmen to Hold Golf Tournament

In connection with golf activities this week the Chicago division of the Salesmen's Association of the Paper Industry holds its monthly tournament at the sporty Tam-O-Shanter Golf Club on Thursday, August 21, according to Frank Prentiss of Hollingsworth & Whitney, chairman of the golf committee. A big crowd will probably be swelled by the attendance of those vacationists who have chosen to stay in Chicago rather than brave the heat of other parts of the country.

Paperboard Meeting Well Attended

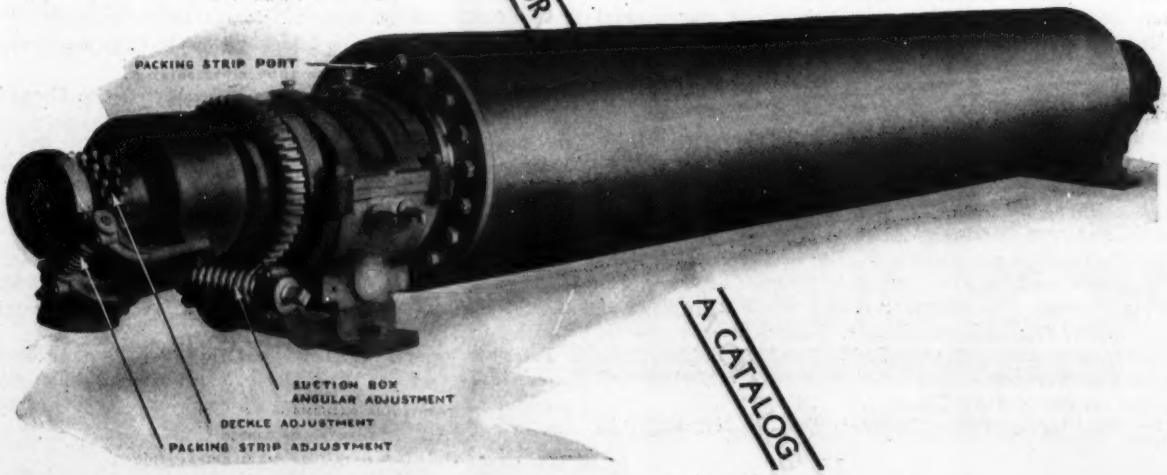
Reports from the main offices of the Paperboard Industries Association at 608 South Dearborn street, Chicago, indicate that the New York meetings at the Commodore Hotel on July 22, 23 and 24 were well attended and of unusual interest to the trade. Features of the three-day meeting included the appearance of Gilbert H. Montague, counsel, relative to improvement in business in various localities through zone or group meetings to be held in the near future; Col. C. W. Gaylord, chairman of the Statistical-Accounting Committee, who reviewed operations during the first six months of the year, and C. P. Ware of the News Print Service Bureau, New York, who talked on "Standard Cost Accounting and the Exchange of Combined Statistical Information." Dr. W. H. S. Stevens, economist of the Federal Trade Commission also made an impression with his address on "Oiling the Wheels of Commerce." The following statements by vice-president MacLeod at the close of the meeting will be of interest to the entire trade: "I wish to read you a brief statement recently made by the Hon. Dwight W. Morrow, who said: "After all is said and done, the most effective cure for bad times rests with business men themselves. There is no substitute for individual initiative, for individual faith, for individual courage."

WRITE YOUR NAME AND ADDRESS ON THE MARGIN OF THIS PAGE AND MAIL IT TO US FOR A CATALOG

As an experiment, one mill ran a Downingtown Suction Press Roll for a considerable time with a loading of 300 pounds per inch of face of top roll in a reversed press. ✓ The newsprint was delivered to the dryers 40% bone dry and then dried on twenty-eight 48" dryers at a speed of 630 F. P. M. with a steam consumption of 3500 pounds per ton of paper. ✓ As far as we know, this is the highest nip pressure that has ever been carried by a suction press roll. ✓ New catalog sent on request.

Downingtown Manufacturing Co.
Downingtown, Pa., U. S. A.

DOWNINGTON KILBERRY PATENT SUCTION ROLL



Boston Paper Market Shows Greater Activity

End of Depression Seems to Have Been Reached and Rebound Apparently Begun — Paper Salesmen Receiving More Orders Than of Late—Manufacturers and Merchants Generally Optimistic—Fine and Coarse Paper Sections Share Improvement

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 11, 1930.—The greater activity in the paper industry continues, although there is no boom. Indications point to a more prosperous period, now that the end of the depression has been reached and the rebound apparently begun. Both manufacturers and merchants are generally optimistic. Reports from travelling salesmen covering territory from Northern Maine to Western Massachusetts show that mill men are receiving more orders and feel that the outlook is bright. Local merchants say that the volume of inquiries is larger, as well as the amount of business. Both fine and wrapping papers share in the improvement. August has started well in kraft with some houses and other report at least a fair demand. There has been considerable call for book papers and coated papers among some merchants. The seasonal demand for specialties, such as drinking cups, continues.

The box board market is improving, but not so fast as had been anticipated. As stocks in the hands of box manufacturers are low it is felt that the demand will increase as the weeks go by. Values remain firm, with filled news board at $37.50 to $40 and chip board at $35 to $37.50.

The paper stock market appears stronger and, in fact, an upward movement has already begun in some materials. Some of the dealers say there should be a rising tendency for at least three months. Waste paper has been selling in most instances at lower than the cost of production, which includes cartage charges twice and the cost of baling. Among the lower grades a number of the dealers are now securing a higher price in Boston, the New York market having previously advanced, especially on mixed papers. It is reported that one of the Boston packers received an order from the West for mixed papers at .22½ to .25, but it is stated that offers of mills in this vicinity are as low as .20. Several Canadian manufacturers have come into the Boston market for waste paper. Because of an urgent need for stock, 3.25 has been paid for foreign manila rope, but a minimum of 3.00 is still quoted in this market. Values of new and old domestic rags remain unquotably changed. In foreign rags, dark cottons have been marked up from .85 @ .95 to .95 @ 1.00 and Dutch blues from 2.00 @ 2.12½ to 2.25 @ 2.50.

Paper Concerns Show Satisfactory Earnings

The annual statement of Hollingsworth & Vose Company shows a surplus of $2,553,219. The assets include real estate valued at $888,021; machinery, $1,445,775; merchandise, $806,603; furniture, fixtures and tools, $11,417; vehicles, $6,354; accounts receivable, $320,791; cash, $14,887; securities, $43,716; treasury stock, $27,500; prepaid items, $72,563. Total, $3,637,627. The liabilities, besides the surplus, include capital of $600,000; accounts payable, $289,458; notes payable, $130,000; reserves, $64,450.

The annual statement of Hollingsworth & Whitney Company shows a surplus of $803,875. The assets include real estate, vehicles, tools and machinery, valued at $7,572,862; merchandise, $2,991,632; furniture and fixtures, $17,244; notes receivable, $111,265; accounts receivable, $643,595; cash, $840,553; securities, $4,278,969; treasury stock, $665,111; Hollingsworth & Whitney of Canada, $3,977,219; deferred charges, $5,328; Brassna storage, $373,301; ad. acct. log oper., $475,570. Total, $21,952,649. The liabilities, besides the surplus, include capital of $20,000,000 and accounts payable of $1,148,774.

The West Dudley Paper Company, West Dudley, Mass., in their annual statement, show a surplus of $310,789. The assets include real estate valued at $352,244; machinery, $280,074; merchandise, $53,425; cash, $11,815. Total, $687,558. The liabilities, besides the surplus, include capital of $250,000 and accounts payable of $126,769.

News of the Trade

Carter, Rice & Co., Corp. are putting in a stock of Gainsborough, the new paper developed by the Reading Paper Mills, of Reading, Pa., for water color and offset work. Its distinctive design adds much to any piece of direct advertising of which it forms a part. The Boston paper house is to stock all sizes and weights in the white and ivory in which it is made and is distributing attractive sample books, effectively demonstrating the adaptability of Gainsborough to the processes mentioned.

The Oxford Paper Company, Rumford, Me., have just completed the preparation of an extremely well printed broadside on Mainefold, a less expensive sheet than their regular grade of Oxford Folding Coated. The folding and printing qualities of Mainefold are particularly demonstrated in this broadside. Carter, Rice & Co. Corp., the New England distributors of Oxford papers, are to send this piece out to the trade August 13.

The Nashua Gummed and Coated Paper Company, has issued a sample book of Nashua Velours, stocked in ten colors at the mill and handled by Carter, Rice & Co. Corp. Advertisers have shown much interest in this line, which makes an unusual cover. The sample book contains some very interesting treatments and will undoubtedly suggest to the printer many ways in which this novel paper can be used.

The Brown Company, Berlin, N. H., is bringing out Romal Bond, offered at 6 cents for converter roll, f. o. b. Berlin. They are also making three grades of kraft, Nibroc, Anon and Romal Kraft.

Ralph L. Day, formerly with Arnold-Roberts Company, has taken a position with the American Writing Paper Company, covering the Boston and New England territory.

B. C. Spaulding, secretary of the Baird & Bartlett Company, is at Wolfeboro, N. H., for a two weeks' vacation. Chester M. Edmond, of the sales department of this company, left today for a two weeks' vacation in Maine.

Wm. N. Stetson, Jr., president and treasurer of Storrs & Bement Company, is passing a vacation at Kennebunk, Me., accompanied by his family. John H. Brewer, general manager of the same company, has returned with his family from a two weeks' vacation at Falmouth, Mass.

Hubert L. Carter, president of Carter, Rice & Co., Corp., has just left for a business trip to the Pacific Coast, expecting to visit the three branches of the company at Portland, Seattle and San Francisco. Charles A. Esty, managing director of the company, has returned from a month's vacation at Orr's Island, Me.

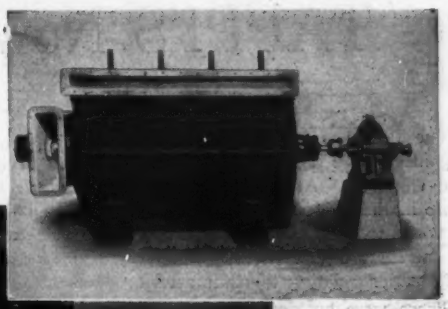
Sidney Evans, of Arnold-Roberts Company, has gone on a vacation.

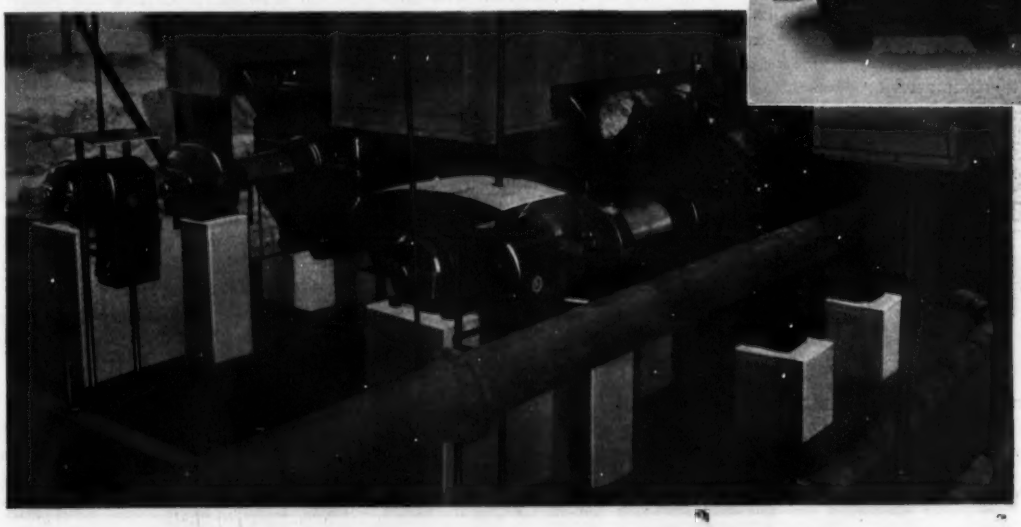
Harry H. Rutter, treasurer of Rutter & McNaught, Inc., is passing his vacation at Monomoy Point, Cape Cod, Mass. William E. McNaught, president of the same firm, has returned from a vacation at Madawaska, Me.

Farrell & Jones, of 10 High street, have been appointed district representatives of the W. A. Jones Foundry and Machine Company, of Chicago, manufacturers of Spur Gear Speed Reducers, etc.

Your best hope for increased profits — under present conditions — is from inside your plant through lowered costs rather than from outside through increased sales.

Herbert N. Casson





CLEAN PULP at LOWER COST

If you interviewed the superintendents in any of the mills where Valley-Thune Rotary Screen installations have been made—you would find two things:

First . . . . that every installation is consistently turning out *clean* pulp comparable with the finest of flat screens.

Second . . . . that operating and maintenance costs have been materially reduced.

What more could you ask? What more could any machine offer than the delivery of thoroughly satisfactory quality, plus a decided reduction in manufacturing costs?

Aren't those the two main objectives you are constantly striving for in your mill? Aren't these the dollar signs of greater earnings for you?

The Valley-Thune Rotary Screen can help you drive down cost levels in your mill. Facts to prove it are here ready to be sent you upon request. Write the Valley Iron Works Co., Appleton, Wisconsin.

VALLEY

Equipment for Paper and Pulp Mills

New York Office: 350 Madison Ave.
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Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

TAPPI'S New Divisional Organization

By R. G. Macdonald[1]

The Technical Association of the Pulp and Paper Industry was organized about sixteen years ago by a small group of chemists and engineers. At that time there was but little technical work done in the industry and only a handful of qualified men could be found to form this nucleus of TAPPI. The expressed purpose of this new organization was to provide means for exchanging information relating to manufacturing processes.

There were but few descriptive texts relating to paper manufacture available and most of these were published in German. Under such circumstances it is easy for us now to appreciate that facts based on experience given out by individuals were of considerable value to those who received them. The Association virtually provided a round table about which members could gather and discuss common problems.

In the years following the Great War the inflow of technically trained men into the pulp and paper industry was very great and as a result the Technical Association grew rapidly. The "round table" idea had to be dispensed with and the conference plan took its place, providing as it did for large assemblies before which papers were read. During the past few years the annual meetings of the Association have been characterized by a large number of meetings each endeavoring to cater to the interests of distinct groups.

Under this plan it has been possible to have as many as three meetings held simultaneously. One of these meetings would be distinctly of interest to laboratory chemists, one to operating men and the third to engineers. A number of committees existed whose function has largely been to provide appropriate papers for the meetings.

Committees have been formed whenever there was an evidence of interest to justify their existence. In general, it may be said that the Technical Association owes much of its success to the loyalty and enthusiasm of its many committee chairmen. Since much of the burden of committee work fell on the shoulders of chairmen it was difficult to get many members to take such position for more than a single year. Continuity of work under such a system was obviously out of the question. During the past few years, however, several committees have adopted objectives and have made real contributions to the industry. Of particular merit has been the work of the committees on paper testing, training for this industry, waste, heat, light and power, physical standards for pulp, materials testing, alkaline pulping, mechanical pulping and abstracts and bibliography. Other committees have done much to make the Association meetings of interest and value and in the year immediately passed several committees have begun work that will soon yield worth while results.

To crystallize the committee work and to place it on a business-like basis the executive committee gave the problem considerable study and reorganized the committees in a manner designed to meet the vocational needs of its members. A review of the Association roster and a knowledge of its members makes it evident that these interests insofar as the possible scope of TAPPI is concerned falls into the following classifications: management, engineering, raw materials, operating, testing, and research and development. It was, therefore, decided to consider these fields of interest to be divisions and the existing committees were at first allocated to appropriate divisions. A complication immediately arose since some committees were primarily interested in general functional activities such as testing, etc., and others endeavored to consider all of the technical problems of specific branches of the industry, as, for example, the committees on paper board, fine and special papers, coated and processed papers and others.

The new divisional plan made it possible to eliminate the latter type of committees but any of these fields can be given special consideration at any time by the functional committees. As a case in point, the new committee on finishing, processing and converting is at present devoting much of its efforts to the problem of the coated paper industry.

In anticipation of the possibility of future conflicts of interest on the part of the committees the executive committee proceeded to define the scope of action of each committee in each division and to cover the field of the pulp and paper industry adequately new committees were created. Undoubtedly, new industrial problems will make it necessary to appoint other committees but it is doubtful if any standing committee can be appointed that cannot be assigned to one of the aforementioned divisions.

The definitions of the committees as adopted by the TAPPI executive committee follow. A brief explanation is given in several cases to amplify the definitions for the benefit of some who may not be well acquainted with the Technical Association activities.

Management Division

EDUCATION COMMITTEE: To provide ways by which students may obtain mill experience; to assist graduates in adjusting themselves to the requirements of the industry; to assist the industry is assimulating trained men and to assist in working out plans of vocational education for all employees.

Note: This committee has hitherto been named the Training for the Industry Committee. During the past few years it has been responsible for providing summer employment for more than one hundred college students annually and during the school year it carried out a plan of having paper mill superintendents and others visit the colleges and give informative lectures to the students interested in the paper industry. In the present organization the committee is given a more general name and will widen its activities to take care of technical men after they have entered the industry and also to assist companies in working out vocational education courses, etc., for all employees.

MANAGEMENT METHODS COMMITTEE: Production, cost and quality control, operating efficiencies, human relations, finance and sales.

Note: The scope of this committee is necessarily great since management must deal with the problem of paper manufacture as a whole. In the sixteen years of the Association's existence a large proportion of its members have advanced to executive positions and find it necessary to consider all of the manufacturing details in their broader relation to each other.

PATENTS COMMITTEE: Procedure, legislation and decisions.

Note: This is a new committee that should prove to be very useful to the paper industry particularly in its opportunity to effect improvements in patent legislation in such a way as to encourage research and invention.

WASTE COMMITTEE: Prevention, elimination and utilization of waste.

Note: Although the problem relating to paper mill waste concerns all phases of manufacture this committee will for the present confine its attention to collecting data and information, and to drawing definite conclusions regarding the various problems and factors involved in white water utilization in the various branches of the pulp and paper industry.

Engineering Division

HEAT AND POWER COMMITTEE: Generation, distribution and application of energy; study of fuels and lubricants.

Note: The development of both steam and hydraulic power is

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An Original Development by
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PROMAL—cast chain having a hitherto unattained combination of high tensile strength and great wear resistance—resulting in longer chain life. All standard sizes and attachments of cast chains for conveying and power transmission can be furnished promptly in Promal metal. Send for Price List No. 950. Address

LINK-BELT COMPANY
Leading Manufacturers of Equipment for Handling Materials Mechanically and for the Positive Transmission of Power
200 South Belmont Avenue, Indianapolis, Indiana Offices in Principal Cities

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a major consideration of the paper industry. Several mills have been built in recent years primarily to utilize available power. The paper industry has been second only to the central power station in utilizing high steam pressures and it has been quick to appreciate the economics of generating steam for the joint purpose of power and process application. The application of electricity for power and light is an important consideration of the committee.

EQUIPMENT COMMITTEE: The design and performance of process and service equipment and supplies for mill and laboratory.

Note: A large proportion of the recent developments in the paper industry have been improvements in machinery. This committee is made up largely of engineers connected with equipment companies. One of the objectives of this committee will be to review the developments in the equipment field and report these annually.

MATERIALS OF CONSTRUCTION COMMITTEE: The physical and chemical nature of materials entering into the construction and maintenance of buildings and equipment.

Note: Although this committee will eventually concern itself with all materials of construction, its immediate interest is in the factors involved in the corrosion of metals and a study of corrosion resistant alloys.

Raw Materials Division

FIBROUS RAW MATERIALS COMMITTEE: Sources, storage, economics and specifications of this class of materials such as wood, rags, old papers, straw.

NON-FIBROUS RAW MATERIAL COMMITTEE: Sources, storage economics and specifications of this class of materials, such as chemicals, clays, starches, sizing materials, dystuffs.

Note: The two committees of this division are new and timely. The standardization of raw materials in several respects is being demanded by the leaders of the industry. These committees will be able to meet this growing demand by studying the factors relating to the materials from their natural state or preparation plant until they are finally utilized for the processes of pulp or paper making.

Operating Division

PREPARATION OF FIBROUS MATERIALS COMMITTEE: Preparation of all fibrous materials for the pulping processes. This includes studies of barking, splitting and chipping of wood, sorting of rags and papers, etc.

PREPARATION OF NON-FIBROUS MATERIALS COMMITTEE: Preparation of all non-fibrous materials for the processes. This includes the preparation of bleach liquor, size colors, clays, alum, starch, etc., but not cooking liquors.

ALKALINE PULPING COMMITTEE: Cooking liquors, digesting, riffling, screening, washing, thickening, bleaching and other treatment prior to stuff preparation.

Note: This committee embraces the field formerly of interest to the soda pulp and sulphate pulp committees. The introduction of many modifications of these processes makes it necessary to adopt the more general term of "alkaline pulping" to most accurately describe its field of interest.

ACID PULPING COMMITTEE: Cooking liquors, digesting, riffling, screening, washing, thickening, bleaching and other treatment prior to stuff preparation.

Note: This committee was formerly known as the sulphite pulp committee. Although its scope is practically the same, the more general title enables it to consider the modifications of the sulphite process that are being developed.

MECHANICAL PULPING COMMITTEE: Physical methods of disintegrating wood and other fibrous materials, riffling, screening, washing, thickening, bleaching and other treatment prior to stuff preparation.

Note: Consideration will be given primarily to the manufacture of ground wood but the physical means of disintegration that have been developed by the insulating board industry will also receive attention.

STUFF PREPARATION COMMITTEE: Beater washing, beating, sizing, loading, coloring, jordaning, screening and metering of the fibrous suspension prior to its delivery to the paper machine.

PAPER MANUFACTURING COMMITTEE: Operation of paper machines and study of paper making factors.

Note: Nearly every part of a paper machine exerts its influence on the manufacture of the paper sheet. These parts include, for example, the head box, apron, wire, slices, suction boxes, table rolls, couch, presses, felts, drier cylinders, drier canvas, calenders, slitters, and winders.

FINISHING, PROCESSING AND CONVERTING COMMITTEE: Coating, supercalendering, waxing, parchmentizing, embossing, dipping, tub sizing, corrugating and other treatment of paper.

Note: This Committee was formerly the coated and processed paper committee. Although it will later cover the field outlined, its efforts for the present are concentrated on the problems of coating paper.

Testing Division

FIBROUS RAW MATERIALS TESTING COMMITTEE: Species identification and other determination of pulping qualities.

Note: The major field of this committee is in the study of various woods suitable for pulping by the known processes.

PULP TESTING COMMITTEE: Standard and control methods for evaluating pulp.

Note: Although pulp is a fibrous raw material insofar as paper manufacture is concerned, the work begun by the Physical Standards for Pulp Committee places pulp testing in a class by itself.

PAPER TESTING COMMITTEE: Standard and control methods for determining the physical and chemical properties of paper.

NON-FIBROUS MATERIALS TESTING COMMITTEE: Standard and control methods for testing non-fibrous raw materials, testing methods for miscellaneous operating supplies such as belting, wires, felts, etc.

Note: Both the Paper Testing Committee and the Non-Fibrous Materials Testing Committee have been active during a period of several years and each committee has sponsored the publication of books in which the standard or official methods of the Technical Association are compiled.

Research and Development Division

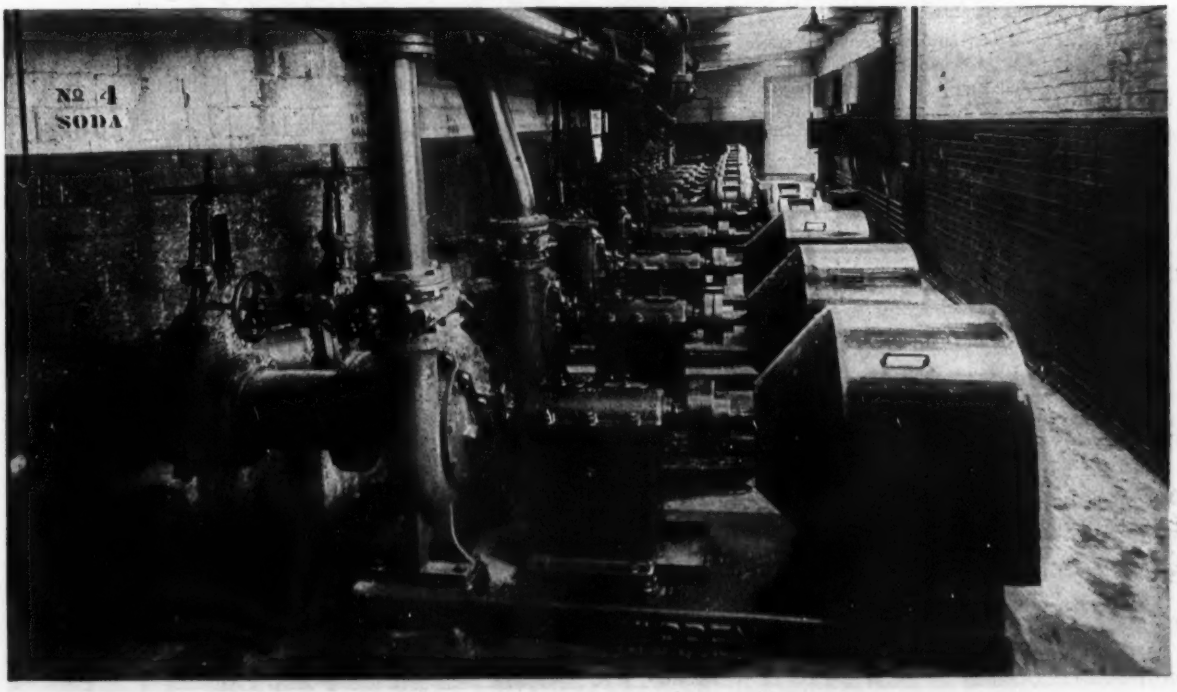
ABSTRACTS AND BIBLIOGRAPHY COMMITTEE: Review and report contributions to the pulp and papermaking literature.

Note: The work of this committee is probably well known to everyone in the industry who read the trade publications. The committee prepares an annual bibliography of pulp and paper making, covering the literature of the world. It also prepares bibliographies on particular phases of paper making. Altogether more than fifty contributions of this kind have been published by the committee. It also publishes quarterly and annual lists of the patents issued by the United States. One of its outstanding contributions has been the Bibliography of Paper Making, 1900-1928, a thousand page book compiled by Clarence J. West, Chairman of the Committee.

PERMANENCE AND DURABILITY COMMITTEE: Interpret and report methods and results of research on permanence and durability of paper for the public. (All published reports issued by this committee must have the unanimous approval of its members).

Note: The amount of conflicting data relating to the permanent and durable qualities of paper became so great in 1929 that it was considered advisable by the executive committee of the Technical Association to appoint a special committee to investigate and keep in touch with the work being done on this subject by various laboratories and derive from this a clear expression of the status of the problem at any time. A policy was adopted to appoint to this committee two representatives of wood pulp using mills, two from rag paper mills and one who may be considered to have no definite interest in either type of mill.

Seventeen of the larger paper makers who put one or two Warren Pumps in on trial have consistently placed repeat orders until their total now stands at 633 pumps . . . More than 69% of the mills that have installed Warren centrifugals for paper-mill service have placed repeat orders . . . proof of dependable, low-cost pumping.



Battery of 12 Warren Stuff Pumps in a large mid-western mill. Two pumps were put in on trial, 177 are now in daily operation in this and other mills owned by the same company.

At a time when profits depend upon low production costs, you cannot afford to overlook the advantages to be gained by using Warren Pumps for every pulp and paper mill service. Bulletins or estimates?

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WARREN . . . . . MASSACHUSETTS

Warren Engineering Corp., 117 Liberty Street, New York City
M. L. Katzenstein, President

Western Engineering Company, 58 Main Street
San Francisco, California

4278

USE REQUIREMENTS COMMITTEE: Study of physical and chemical conditions to which pulp and paper are subjected. To report on new uses for pulp and paper.

Note: The need on the part of the industry of information that will increase paper distribution led to the formation of this committee. One of the main considerations in determining new uses for paper or in improving the properties of paper is knowledge concerning the physical and chemical conditions to which such paper will be subjected in use.

Other Committees

It is felt that the committee and divisional organization of the Technical Association as outlined will meet the needs of the industry in an effective manner.

From time to time a demand may grow for other committees which will be appointed. In the Association's relations with other organizations it will also be advantageous in many cases for TAPPI to be represented on joint committees or on committees of other societies of which the Technical Association may be a member. As examples of the former we have the Joint Committee of Approved Pulp Testing Chemists in which TAPPI cooperates with the A.P.P.A. and the Association of Wood Pulp Importers. There is also the Joint Educational Committee in which cooperation is with the A.P.P.A. and the Superintendents Association and the Joint Committee on Vocational Education in which the Association cooperates with the Technical Section of the Canadian Pulp and Paper Association. Since the Association is a member of the American Society of Testing Materials it is privileged to appoint representatives to serve on the standing committees of that organization.

It is obvious that many of the problems considered will need the joint assistance or two or more committees. This will necessitate cooperation on the part of the involved committee. A study of steam requirements, for example, would possibly need the consideration of the Heat and Power Committee, the Equipment Committee, and possibly several of the committees in the Operating Division. The newly adopted plan of having divisional chairmen makes such joint endeavors easy to bring about and the care that has been taken to define the fields of interest of the individual committees should do much to determine the limitations of the committees.

As a result of the work that has been done this year to establish the Technical Association committee work on a businesslike scale it may be expected that the contributions to the upbuilding of the pulp and paper industry will be of even greater value than they have heretofore.

Divisional and Committee Chairmen

Management Division—P. H. Glatfelter, president of the P. H. Glatfelter Company, Spring Grove, Pa.

Education Committee—H. G. Noyes, Wisconsin Vocational Schools, Appleton, Wis.

Patents Committee—C. W. Rivise, patent attorney, Philadelphia, Pa.

Management Methods Committee—L. C. Reynolds, assistant to the President, American Writing Paper Company, Holyoke, Mass.

Waste Committee—C. M. Baker, engineer, American Paper and Pulp Association, New York, N. Y.

Engineering Division—J. F. Rhoades, chief engineer, Mead Corporation, Chillicothe, Ohio.

Heat and Power Committee—J. D. Rue, engineer, News Print Service Bureau, New York, N. Y.

Equipment Committee—G. S. Brazeau, Appleton Machine Company, Appleton, Wis.

Materials of Construction Committee—J. D. Miller, chief chemist, York Haven Paper Company, York Haven, Pa.

Raw Material Division—J. L. Parsons, research chemist, Hammermill Paper Company, Erie Pa.

Fibrous Materials Committee—Jessie E. Minor, paper technologist, Rag Content Paper Manufacturers, Springfield, Mass.

Non-Fibrous Materials Committee—A. C. Dreshfield, Paper Makers Chemical Corporation, Kalamazoo, Mich.

Operating Division—F. C. Clark, consulting engineer, Skinner & Sherman, Inc., Boston, Mass.

Preparation of Fibrous Materials Committee—F. Hayward Johnson, Jr., sulphite engineer, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.

Preparation of Non-Fibrous Materials Committee—John Campbell, director of research, International Paper Company, Glens Falls, N. Y.

Mechanical Pulping Committee—J. H. Slater, general manager, Escanaba Paper Company, Escanaba, Mich.

Acid Pulping Committee—L. E. Jonte, engineer, Hoberg Paper and Fibre Company, Green Bay, Wis.

Alkaline Pulping Committee—E. S. Hinman, pulp mill superintendent, P. H. Glatfelter Company, Spring Grove, Pa.

Stuff Preparation Committee—E. G. Ham, chief chemist, John A. Manning Paper Company, Troy, N. Y.

Paper Manufacture Committee—L. M. Yoerg, general superintendent, American Writing Paper Company, Holyoke, Mass.

Finishing, Processing and Converting Committee—Norman Clark, superintendent of coating mill, Standard Paper Manufacturing Company, Richmond, Va.

Testing Division—E. O. Reed, technical director, Crane & Co., Dalton, Mass.

Fibrous Materials Testing Committee—W. H. Monsson, chemist, Munising Paper Co., Munising, Mich.

Non-Fibrous Materials Testing Committee—R. C. Griffin, director of tests, A. D. Little, Inc., Cambridge, Mass.

Pulp Testing Committee—D. E. Cable, assistant to manager, Fibre Products, Department Mechanical Rubber Company, Cleveland, Ohio.

Paper Testing Committee—B. W. Scribner, chief of Paper Section, U. S. Bureau of Standards, Washington, D. C.

Research and Development Division—C. E. Surran, chief pulp and Paper section, U. S. Forest Products Laboratory, Madison, Wis.

Abstracts and Bibliography—C. J. West, director of research information service, National Research Council, Washington, D. C.

Use Requirements Committee—P. K. Baird, senior chemist, U. S. Forest Products Laboratory, Madison, Wis.

Permanence and Durability Committee—F. C. Clark, consulting engineer, Skinner & Sherman, Inc., Boston, Mass.

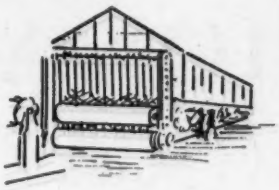
Chemistry and Paper Manufacture

CHEMIE UND PAPIERFABRIKATION (Chemistry and Paper Manufacture). Arthur St. Klein. Berlin, Otto Elsner Verlagsgesellschaft m. b. H., 1930. 48 p. Price, RM 1.50.

This little book opens with a brief discussion of the growth of the paper industry; according to Munsell, the world's production of paper in 1800 was about 10,000 tons; in 1850 it had reached 100,000 tons; in 1900, 8,000,000 tons were produced; and in 1928 it was about 18,500,000 tons. In 1913 the United States consumed about 40 percent of the paper produced but in 1927 this had increased to about 60 percent. While in 1900 the United States consumed only 19 kg. of paper per person per year, in 1927 this figure was 70 kg.

Because of space limitations the only raw material considered is wood; about 70 per cent of the paper manufactured is mechanical or chemical wood pulp. The two principal constituents of wood, cellulose and lignin, are discussed in a general way. Then follow the changes taking place in cellulose in the beater (swelling, hydration, etc.); more than one-third of the book is devoted to this section. Other operations in the beater, including sizing, dyeing and loading, are also briefly discussed. For the size of the book, it includes many references to the original literature.

While the book does not in any way compare with the larger work of Sutermeister, "Chemistry of Pulp and Paper Making," yet it is very interesting reading and from it one who is not interested in details can obtain a fairly complete idea of the role of chemistry in paper making.—C. J. WEST.



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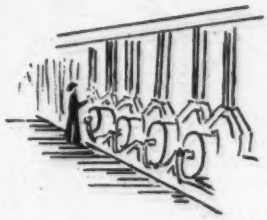

To Know, And Let You Know, When Better Heating and Ventilating Becomes Possible

The proven success of ROSS SYSTEMS for placing mill heating and ventilating on a scientific and economical basis has naturally encouraged the introduction of new theories and new methods from many sources for the possible attainment of similarly effective results.

Unfortunately, all such methods brought forward to date, lack in some important respects what they appear to gain in others. When more efficient, practical and economical methods are possible, Ross engineers, with their background of long experience and research facilities, will recognize and sponsor them for the welfare of the industry.

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TO CUT SIZING COSTS
AMERICAN
UNDER U. S.

The well known DELTHIRNA PROCESS for cutting sizing costs is now available to paper makers of the U. S. A.

In order to give a completely localized service there has been organized the

AMERICAN DELTHIRNA CORP.

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which has secured from Procédés Navarre, the exclusive right to manufacture and sell under U. S. Patent No. 1,759,526 in the entire United States.

This process is also fully protected by patents in all countries including Canada where 7 mills are using the process with marked success.

PROCEDÉS NAVARRE
Lyon, France

155 MILLS THROUGHOUT THE WORLD

DELTHIRNA

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— NOW AVAILABLE TO
PAPER MAKERS

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MANSFIELD, BOLTON & KENT

Chemical Engineers and Sizing Experts

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AMERICAN DELTHIRNA CORP.
250 Park Avenue, New York

ARE NOW SATISFIED USERS OF
PROCESS . . .

FIR-TEX INSULATING BOARD CO. OPENS NEW PLANT

(*Continued from page 23*)

The driers were installed by the Coe Manufacturing Company of Painesville, Ohio, and are of the continuous roller type, automatically fed, 11 feet high and 15 feet wide, with a capacity running normally of 250,000 feet each 24 hours.

Biggs Boiler Works of Akron, Ohio, installed the six 18-foot diameter spherical digesters under the supervision of Jack Turner.

Beloit Iron Works Furnish Fourdrinier

The Beloit Iron Works of Beloit, Wis., built and installed the Fourdriner board machine. The unit consists of three main press sections and five primary sections with two rolls to each press. The rolls in the main press weigh about 12 tons each. This machine was built specially to meet the needs of the Fir-Tex process and is the only one in existence capable of turning out an insulating board of this thickness.

The J. F. Shea company of Portland had the general contract on the mill. Other firms of prominence who had part in the project include Jeffrey Manufacturing company, Griffith Rubber company, Bingham Pump company, Pacific Blow Pipe company, Crane company, Pacific Iron Works, General Electric company, National Tank & Pipe company.

Officers of the Company

The officers and members of the board of directors of the Fir-Tex Insulating Board company, represent paper and lumber

A. E. MILLINGTON

interests of outstanding prominence in the Pacific northwest. The following are the officials: Charles E. Dant, of Dant & Russell, Inc., Portland, chairman of the board; Hamlin F. McCormick, chairman of the board of the St. Helens Pulp and Paper company, St. Helens, president; Arthur E. Millington, vice-president and general manager; Kenneth D. Dawson, president States Steamship company, vice-president and treasurer; John S. Coke, of Griffith, Peck & Coke, attorneys, secretary.

The board of directors includes Charles E. Dant, chairman; C. A. Millington, chief engineer; A. J. Lewthwaite, formerly vice-president and general manager of the Crown-Willamette paper company, Portland; F. A. Nitchy, local manager of the Crane company, Portland; Herbert Fleishacker, president of the Anglo-London Paris National bank, San Francisco; Lee A. Phillips, executive vice-president Pacific Mutual Life Insurance company and president of the Pacific Finance company, Los Angeles; John S. Baker, president Fidelity Trust company, Tacoma, Wash., and president of the Tacoma-Oriental S. S. company; Stanley Anderson, capitalist, Beverly Hills, Cal.; E. B. King, president King Lumber company, San Francisco; Charles A. Shea of the J. F. Shea company, Portland; William B. Dean, general manager Diamond Match company, Chico, Cal.; A. E. Millington; Franklin T. Griffith, president Pacific Northwest Public Service company; Kenneth D. Dawson; H. F. McCormick.

Executive Committtee: Charles E. Dant, chairman; Franklin T. Griffith, Hamlin F. McCormick, Kenneth D. Dawson, and Charles A. Shea.

C. A. MILLINGTON

A. E. and C. A. Millington

A. E. Millington and C. A. Millington, through whose experience and skill Fir-Tex was discovered, combine a diversity of ability and knowledge acquired in many previous contracts. The former was for a term of years production and construction engineer of the Celotex company of New Orleans and Florida, his son, C. A., being also engaged in construction and development work.

For 10 years A. E. Millington was general manager of the Spanish River Pulp and Paper company at Espanola and Sault Ste. Marie, Ontario, which plants he designed, built and operated. He was general manager of the Southern Paper company at Moss Point, Miss., which plant he assisted in designing and for which he had complete charge of building and operation.

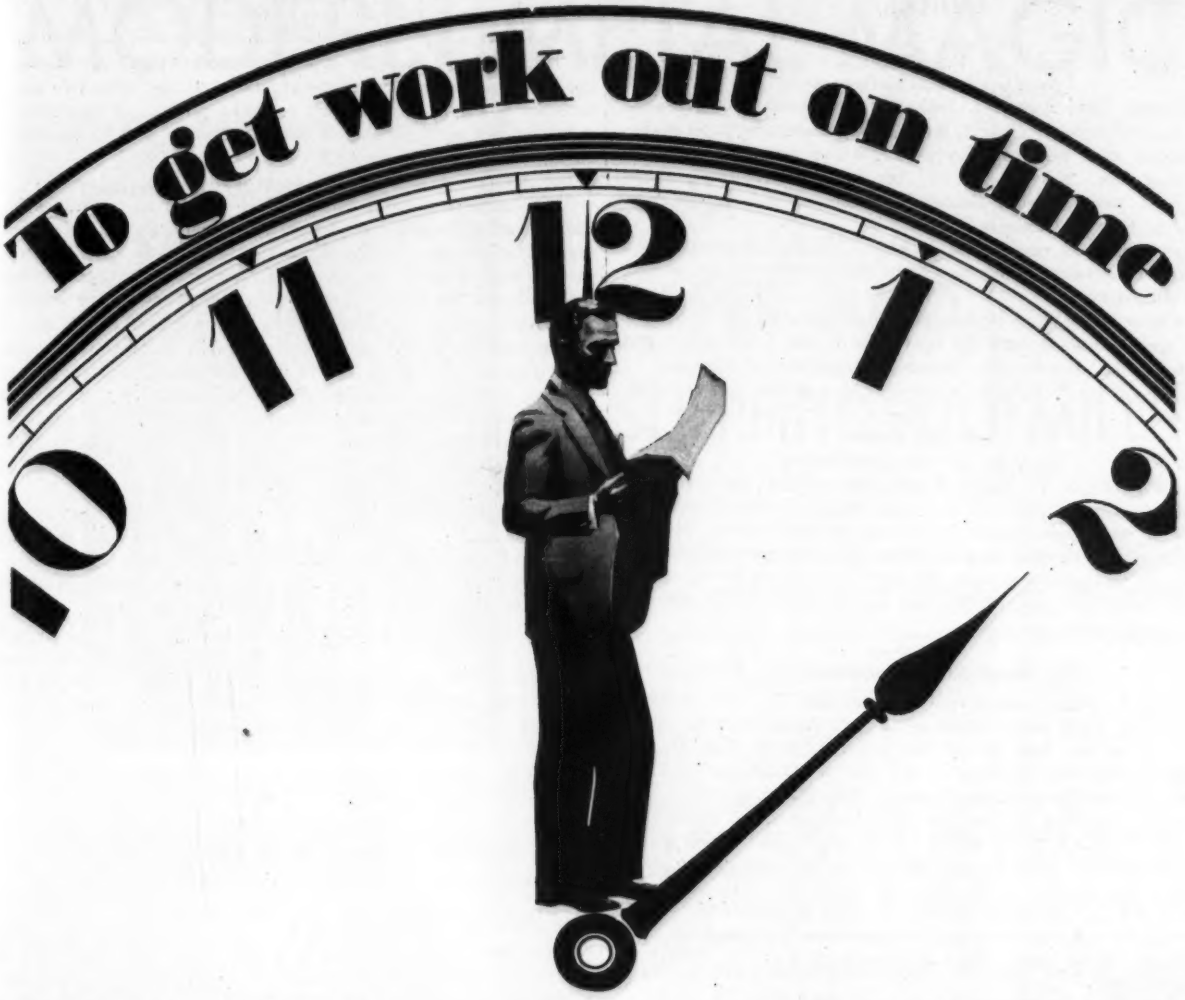
As vice-president and general manager of the Myers Pulp and Paper company of Denver, Colo., both the Millingtons had a part in designing and putting the plant into operation, and they also designed and put into operation Waterway Paper Products company of Chicago which was the first plant to manufacture news print from old waste paper.

For two years A. E. Millington was general superintendent of the Minnesota & Ontarion Paper company of International Falls, Minn., which plant manufactures Insulite insulating board.

As an efficiency engineer and production expert he was for five years with such plants as the Rhinelander Paper company, Wisconsin; Marathon Paper Mills; Consolidated Water Power and Paper company; Seaman Paper company, Chicago, and Whalen Pulp and Paper mills, British Columbia.

A. E. Millington began to work in a pulp and paper mill when he was 14 and since that time has not been out of the industry for more than a month at a time. He trained his son in this line as soon as he was old enough. When Carl finished high school he went to Toronto Tech and also to the engineering plant. It was Carl who laid out and designed the Fir-Tex plant and determined the site for the factory.

To get work out on time



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The G.T.M.—Goodyear Technical Man—has a faculty for getting work done. He studies all factors. He has a liking for action. Now machinery, now tools, now goods, come under his scrutiny. What special conditions exist? Is power lost in transmission? But whether movement of goods, liquids, air, or engine-power is the problem, he gets at the facts. He applies a practical remedy. By careful specification of Goodyear Mechanical Rubber Goods in Hose, Belting, Molded Rubber Goods, or Packing, he keeps countless jobs moving. He saves expense. He pegs down on results.

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THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS MOLDED GOODS HOSE PACKING

Obituary

J. Fred Booth

[FROM OUR REGULAR CORRESPONDENT]

OTTAWA, Ont., August 5, 1930.—J. Fred Booth, vice president and general manager of J. R. Booth, Ltd., lumber and paper manufacturers, died today in Rochester, Minn., according to word reaching here. His age was 61. He was the second son of the late J. R. Booth, pioneer Canadian lumberman, and the father of Princess Erik of Denmark.

Mr. Booth was educated at Bishop's College, Lennoxville, and Queens University. In his university days he was an outstanding football player.

He spent forty years in the Booth firm beginning at the bottom. His special interest was the operation of the firm's paper and lumber mills. His brother, Jackson, is president of the firm.

Besides Princess Erik, he is survived by a widow and two sons.

Milton Brill

[FROM OUR REGULAR CORRESPONDENT]

LYON FALLS, N. Y., August 9, 1930.—Milton Brill, superintendent of the Gouldtown plant of the Gould Paper Company, died this week at the Faxton Hospital following a brief illness. He was 61 years old. He had been identified with the paper making industry in this section virtually his entire life, being in the employ of the Gould company for the past fifteen years. He is survived by his wife and three sons.

Alfred S. Guggenheimer

Alfred S. Guggenheimer died Monday, July 28, at his home in New York, death being caused by a heart attack after an illness of a few weeks. The funeral was held Wednesday, July 30. Mr. Guggenheimer was president of the United Manufacturing Company, of New York and Springfield, Mass.; he was also one of the vice presidents of the Fiberloid Corporation of Springfield, Mass. He had been an officer of the Glazed and Fancy Paper Manufacturers Association for many years and at the time of his death was a member of the executive committee. He was active and held many offices in various charitable organizations. He is survived by his wife, Rebecca L. Guggenheimer, a daughter, Mrs. Alexis L. Schlesinger, and a fifteen years old son, Robert G. Guggenheimer.

Holyoke Man Invents New Dandy Roll

HOLYOKE, Mass., August 4, 1930.—The invention of a new dandy roll which portends to be one of the major developments in the paper making industry in recent years, was announced last week by Walter Knowles Trotman of Linden street, a recognized pioneer in dandy roll production in the world says the *Holyoke Daily Transcript*. Mr. Trotman has secured a patent for his product and has presented it to the trade for consideration.

This dandy roll, which probably will be called the fibre cover, will give to paper the appearance simulating a fabric, at no greater cost than is entailed for the ordinary surfacing done with the laid or wove cover. If a manufacturer now desires to put the attractive fibre finish on, it is necessary to replate the paper at a cost of approximately three cents a pound. This extra cost can be saved by Mr. Trotman's invention.

The dandy roll has been tried on machines in some of the Holyoke paper mills with great success. The results obtained in the early stages of his work inspired Mr. Trotman to perfect the article, and thus create a third type of dandy roll. For five years, the Holyoke inventor has been working on the problem, and now with the approval and protection of the Commissioner of Patents, has the dandy roll ready for operation.

"Little is known yet in the paper trade about this development; but when the knowledge gets abroad, it is expected that a great deal of interest will be stirred among paper manufacturers. Already, the few who know about it, are studying it carefully with an eye on the future possibilities.

"There are now only two standard dandy rolls—the wove and the laid. A wavy fibre-like appearance is desired on the finish of the paper to get away from the regularity of the other two rolls. In order to obtain this, an extra replating process, at considerable cost was necessary. This new dandy-roll cover will do the work on the paper machine itself."

The description of it in the patent permit is as follows:—

"This invention relates to a method of and an apparatus for water marking paper, and particularly to a method of an apparatus for imparting to the paper an appearance simulating a fabric, thereby improving the appearance of the paper without altering the quality of the same. Towards this end, this invention contemplates the provision of a dandy roll having a cylindrical surface in which there are formed or cut a series of irregular wavy slots of such irregularity that they leave upon the paper, contacting with the roll, impressions which, when viewed collectively, simulate a fabric material. Comparative ease of operation and consequent inexpense of manufacture of paper, or further desirable features have been borne in mind in the production and development of the invention.

"Some of the best work in the development of the dandy roll has been done by Mr. Trotman, 67 year old English inventor, who has made his home in Holyoke since 1913. He was head of the Trotman Dandy Manufacturing Company, Ltd. of Great Britain. One of his important creations was the mould for the currency of the Bank of England and for the rupee of India. During the World War, he was called upon by the United States Government to make an official watermark that would be fool proof against any duplication. The plate of that work, which was used by the government, is one of his many prized possessions.

Mr. Trotman's son, W. K. Trotman, is still in charge in England, and Trotman with his son, Leslie, is running the Trotman Dandy Roll Co. in Holyoke.

Options on Paper Mills Not Excercised

WATERTOWN, N. Y., August 4, 1930.—Options on prominent mills properties obtained several weeks ago by H. F. Farrington, of Farrington, Hyland & Gregory, expired this week and it is understood that they will not be renewed. Among the concerns involved were the Brownville Paper Company, Sherman Paper Company, Brownville Board Company, and Knowlton Brothers Inc. Mr. Farrington represented extensive financial interests and it was rumored that the options were obtained for the purpose of forming a merger. While no option was held on the Dexter Sulphite Pulp and Paper Company, it was said that the concern was willing to consolidate if the plan was carried through.

While it was said that the options would not be continued it was learned that a group of New York financiers had made an attractive bid for the above mentioned mill properties in an effort to secure complete control. It was also learned that the capital seeking control of the mills had been angling for all of the water powers along the Black River between Carthage and Dexter not owned by the Niagara Hudson Power Corporation. It is understood that the plan called for a separate power corporation to develop the power and market the current while another organization would control the mills. Among the valuable power sites mentioned as being sought were those owned by the Sherman Paper Company at Great Bend, International Paper Company near Glen Park, and Dexter Sulphite Pulp and Paper Company at Dexter.

Columbia River Paper Mills Ship Pulp

VANCOUVER, Wash., August 8, 1930.—The Columbia River Paper Mills, shipped 220 tons of pulp, paper and paper bags to California, on the steamer Hamlin F. McCormick, August 2.

MODERN METAL MAGIC

FOR PAPER AND SULPHITE PULP MILLS

Exhaustive tests and actual use have resulted in the acceptance of Nirosta as the most dependable metal for pulp and paper equipment subjected to acid attack.

THROUGH all the ages, metallurgists have dreamed of a metal like Nirosta. A metal beautiful as the precious metals. A strong metal—easily worked. A metal with glass-like indifference to all common causes of corrosion. » » Such is Nirosta—perfected chrome nickel steel alloy. » » It is immune to atmospheric and salt water corrosion—amazingly resistant to high pressures and temperatures—to most acids. » » It can be deep drawn, wire drawn and spun—easily gas or electric welded—readily machined—brilliantly finished and polished. » » So workable, so versatile that it can be used to crown a skyscraper or fashion a surgeon's needle. » » Your business can benefit from Nirosta. Let us tell you how. KRUPP NIROSTA COMPANY, INC., Offices and exhibit room 2638 New York Central Bldg., New York.

Nirosta Metal provides maximum ductility and resistance—only obtainable when processed under Krupp Nirosta patents by these licensees:

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CRUCIBLE STEEL COMPANY OF AMERICA
DETROIT SEAMLESS STEEL TUBES COMPANY
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DRIVER-HARRIS COMPANY
THE DURIRON COMPANY, INC.
ELECTRIC STEEL FOUNDRY CO.
A. FINKL & SONS CO.
FIRTH-STERLING STEEL COMPANY
GENERAL ALLOYS COMPANY
GLOBE STEEL TUBES CO.
GRIFFIN MANUFACTURING CO.
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THE OHIO SEAMLESS TUBE CO.
PACIFIC FOUNDRY CO., LTD.
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SHAWINIGAN STAINLESS STEEL & ALLOYS, LIMITED
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Trade Mark Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, 900 F street, N. W., Washington, D. C., trademark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

SUPER SAK, S.—Ser. No. 292,755. Spreen-Droge Paper Company, Inc., Brooklyn, N. Y. For containers or paper bags.

D. & G. TORCHOM.—Ser. No. 296,858. Dill & Collins Company, Philadelphia, Pa. For book and cover papers.

Fanciful design, and scenery.—Ser. No. 297,912. Hoberg Paper and Fibre Company, Green Bay, Wisconsin. For toilet paper, paper towels, and paper napkins.

CHARLOTTE, and fanciful portrait of a woman.—Ser. No. 297,713. Hoberg Paper and Fibre Company, Green Bay, Wis. For toilet paper, paper towels, and paper napkins.

THE KEN-NAH.—Ser. No. 299,578. Ernest Menard Kenna, N. Y. C. For indexed paper book markers.

LOANETTE.—Ser. No. 300,084. Willard B. Pillsbury, Chicago, Ill. For stationery.

RADIO SUNBEAM. "SUNBEAMS OF JOY."—Ser. No. 300,621. Nathan Erber, Fort Wayne, Indiana. For blank books.

COLONEL LEDGER.—Ser. No. 300,669. Riverside Paper Corporation, Appleton, Wis. For ledger papers.

COLONEL MIMEOGRAPH.—Ser. No. 300,670. Riverside Paper Corporation, Appleton, Wis. For mimeograph papers.

ANON.—Ser. No. 300,921. Brown Company, Portland, Me., and Berlin, N. H. For wrapping paper.

"COMMANDER."—Ser. No. 301,246. Columbia Ribbon and Carbon Manufacturing Company, Inc., Glen Cove, N. Y. For typewriter ribbon and carbon paper.

MAINEFOLD.—Ser. No. 301,356. Oxford Paper Company, New York. For coated paper.

TRADE MARK CONSISTING OF CORE ON WHICH PAPER IS WOUND IS DARK BROWN.—No. 284,517. Albany Perforated Wrapping Paper Company, Albany, N. Y. For toilet paper.

FIRMBUILT.—No. 299,156. Regent Card and Paper Co., Inc., New York City. For bond paper.

P. S. A. CO.—No. 299,619. Charles W. Peck, Cincinnati, Ohio. For account books.

DYNAMODE.—Ser. No. 300,260. Z. & W. M. Crane, Inc., Dalton, Mass. For writing paper and envelopes.

NORTHERN, and representation of northern woods.—Ser. No. 300,291. Northern Paper Mills, Green Bay, Wis. For toilet paper.

ZALO.—Ser. No. 302,151. National Paper Products Company, San Francisco, Cal. For toilet paper.

BROADCAST.—Ser. No. 298,973. Bradner Smith & Company, Chicago, Ill. For paper—namely, cover paper, bond paper, enameled book paper, ledger paper, writing paper, drawing paper, etc.

SILVER WING.—Ser. No. 301,694. Port Huron Sulphite and Paper Company, Port Huron, Mich. For bond ledger, printing and writing envelope and safety papers.

KINGSWAY.—Ser. No. 301,794. Block Brothers, Paper Company, Inc., New York City. For bond paper and ledger paper.

UTOPIAN.—Ser. No. 300,929. Curtis & Brother Company, Newark, Del. For book paper.

UNICORN, and fanciful representation of a unicorn.—Ser. No. 300,930. Curtis & Brother Company, Newark, Del. For book paper.

New York Trade Jottings

Alfred W. Jenkins, of Parsons & Petit, 26 Beaver street, New York, plans to sail from New York aboard the steamer *Saturnia* on Friday, August 15, for an indefinite stay abroad.

* * *

Hakon Gullander, of Svano Aktiebolag Svano bruk, Sweden, arrived in New York recently to study the pulp situation in the United States. He plans to spend several weeks in this country before returning to Sweden.

* * *

The Seymour Company, Inc., general paper merchants, of 326 West 16th street, New York, has become a distributor of the Louis De Jonge papers and of the products of the Waterfalls Paper Mills, of Merchanic Falls, Me.

* * *

Prat-Daniel Corporation, manufacturers of the Thermix stacks, Dust Collectors and Thermix Air Heaters, of 183 Madison Avenue, New York, announces the appointment of C. B. McBride as a member of the Sales Department at their main office.

* * *

The executive committee of the Printing Estimators Club discussed plans for widening the scope of Standardization work at a recent meeting in the Printing Crafts Club. The organization seeks to enlist the co-operation of the paper mills in establishing standard size paper samples.

* * *

Richard T. Stevens, president of the Japan Paper Company, has returned from a tour through England, France, Italy, Germany, Austria and Switzerland. Mr. Stevens visited many of the European mills which are sources of supply of the Japan Paper Company papers, and arranged for the importation of new papers from famous Old World mills.

* * *

Certain-Teed Products Corporation and subsidiaries report for six months ended June 30, 1930, net loss of $756,938 after depreciation, depletion, interest and Federal taxes, comparing with net loss of $665,478 in first half of 1929.

Net loss for quarter ended June 30 was $206,374 after above charges, comparing with net loss of $550,564 in preceding quarter and net loss of $81,904 in June quarter of previous year.

Finch, Pruyn & Co. Make Improvements

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., August 11, 1930.—New equipment was installed in the plant of Finch, Pruyn & Co., this week which necessitated suspension of operations in some departments. One of the large paper machines was shut down early in the week to allow the installation but it was announced that full activities would be resumed on next Monday afternoon.

The company is also reported to have contracted for a large consignment of foreign wood pulp which is expected to reach this city within a few months. Plans call for the unloading of the vessels at the local terminal from whence the product will be conveyed by trucks to the plant.

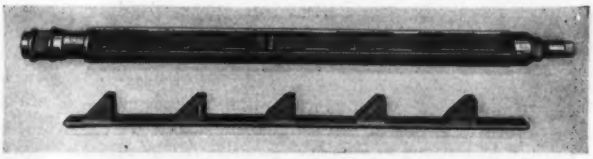
J. B. Harris Leaves Northwest Paper Co.

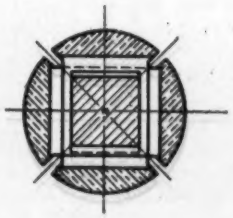
CLOQUET, Minn., August 11, 1930.—J. B. Harris, has resigned his position with the Northwest Paper Company at Cloquet, where he has been superintendent of the beater and color department for the past five years and seven months. Mr. Harris resigned his position on account of his health to take a good rest. He is leaving for Virginia, his future plans are not known.

The Easy Way with Plugged Rolls

PLUGGED rolls are used to save trouble. The saving is genuine and complete when M & W Collapsible Shafts are used; for those shafts come out from the rolls as readily as the paper winds on the shafts.

To remove a shaft, simply slacken the big nut at one end. That allows the four brass segment bars to "fall inward" like a shut umbrella. Then the shaft slips out without coaxing.





Cross Section of Shaft

The expanding action is due to beveled lugs on the brass segment bars, working against each other in pairs. The nut just mentioned produces the endwise movement of the bars necessary for expansion. There are no springs, small screws, or rivets.

Try one shaft in your fussiest job of winding.

THE MOORE & WHITE COMPANY
Established 1885
15th ST. & LEHIGH AVE. PHILADELPHIA, PA.

M&W BRASS COLLAPSIBLE DRUM WINDER SHAFTS

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Erie, Pa.—The Hammermill Paper Company, East Lake Road, has completed plans for a new addition to its mill, to be used for extension in the finishing division. The new unit will be one-story, 25 x 90 feet, and is reported to cost over $60,000, with equipment. A general contract for superstructure has been let to the Platt Company, Palace Hardware Building, which will place work under way at once.

Waukegan, Ill.—The National Envelope Company, 22 West Adams street, Chicago, Ill., is completing plans and will soon begin work on an addtion to its plant at Waukegan, consisting of a two-story and basement structure, 120 x 140 feet, reported to cost over $100,000, with equipment. The unit will provide for large increase in present output, doubling the present manufacturing space. Shattuck & Layer, 134 North La Salle street, Chicago, are architects.

Oklahoma City, Okla.—The Oklahoma Straw Board Mills, Inc., is being organized under state laws by local interests, headed by John Y. Garlington, 729 Culbertson Drive, Oklahoma City. The new company is selecting a site in this vicinity and plans to begin erection of a new mill in the fall for the manufacture of strawboard products, utilizing corn stalks, cotton stalks, as well as wheat straw for raw material. The initial works will consist of a main unit, with smaller auxiliary structures, and is reported to cost over $75,000, with machinery. It is understood that the new company proposes to select necessary equipment at an early date.

Kansas City, Mo.—The Phenix Box and Label Company, Wright Smoke Building, is completing plans for a new local plant at 1630 Central avenue, for the manufacture of paper boxes, labels, etc. Bids are expected to be asked on general contract at an early date. The unit will be one-story and basement, 100 x 169 feet, with foundations to provide for an additional story at a later date. The plant is reported to cost over $75,000, with equipment. H. F. Brandenburger, Telephone Building, Kansas City, is architect; Frank L. Brown, of Orear-Leslie Building, is structural engineer. Arthur C. McCrum is president of the company.

New York, N. Y.—The Owname Products Corporation, recently chartered with a capital of 100 shares of stock, no par value, by Robert Sterling, 2042 Bedford avenue, Brooklyn, N. Y., and associates, is said to be planning the early operation of a local plant for the manufacture of paper boxes and containers, including paper novelties of various kinds. B. J. Longstreet, 10 Post avenue, New York City, is interested in the new company.

Chicago, Ill.—The Vortez Manufacturing Company, 421 North Western avenue, manufacturer of paper cups and containers, has active work in progress on a new addition to its plant, for which a building permit was recently issued. The new factory will be four-story, and is estimated to cost close to $400,000, with machinery. It will provide large increase in present output. The company is running the present plant on a capacity schedule, and is said to have orders on hand to insure continuance on that basis for some months to come. A full working force is being employed.

Hoboken, N. J.—Fire, August 6, destroyed a portion of the warehouse and distributing plant of the Gatti Paper Stock Corporation, Monroe street, with loss reported at about $75,000, including paper stock. No announcement has been made regarding rebuilding, and it is understood that no plans of this kind will be made at the present time, as the company has recently arranged for expansion with the purchase of the former factory of the Peerless Rubber Company, North Bergen, N. J., by Joseph Gatti, president. Main offices of the company are at 122 East 42nd street, New York.

Buffalo, N. Y.—Karl C. Franklin, 158 Victoria Boulevard, Kenmore, Buffalo, and associates have organized the Karl C. Franklin Paper Company, with capital of $25,000, and 450 shares of common stock, no par value, to operate a local plant for the manufacture of paper boxes and containers, as well as paper novelties of various kinds. Early production is proposed. Frank C. Moore, 271 Argonne Drive, Kenmore, is interested in the new company.

West Springfield, Mass.—The Strathmore Paper Company, Mittineague, Mass., is said to have revised plans nearing completion of its proposed new mill until at West Springfield, reported to cost close to $150,000, a portion of the structure to be used for printing service. L. H. Howes is company engineer in charge.

Panama City, Fla.—The Southern Kraft Corporation, 466 Michigan avenue, Mobile, Ala., a subsidary of the International Paper Company, 220 East 42nd street, New York, is said to have awarded a contract to the Rust Engineering Company, Koppers Building, Pittsburgh, Pa., for a quantity of machinery for installation in its new local mill, now in course of erection. The plant will be used for the production of kraft papers, and is reported to cost close to $1,500,000, with equipment. Other machinery awards are expected to be made at an early date.

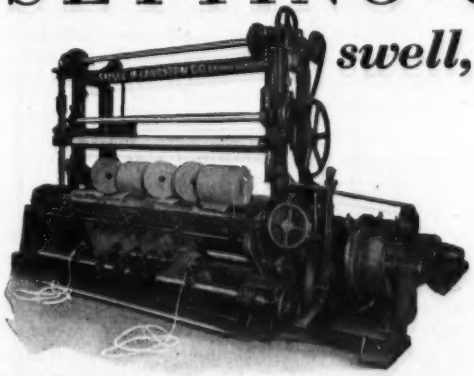
Wisconsin Rapids, Wis.—The Ahdawagam Paper Products Company, Wisconsin Rapids, has approved plans for the immediate erection of a new local plant for paper goods production, consisting of a main one-story unit, 110 x 200 feet, reported to cost over $90,000, with machinery. The mill will be of steel and concrete type, and construction will be carried out by day labor.

Orono, Me.—The Orono Pulp and Paper Company, Orono, acquired a number of months ago by the Eastern Manufacturing Company, Bangor, Me., and since operated by a subsidiary of that company, has been carrying out a general improvement program in recent months for increased capacity and efficiency at the plant. It is understood that the mill is now in condition to operate on a full basis with improved output rating, and will be held on such a schedule for an indefinite period.

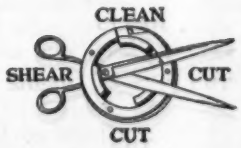
Trenton, N. J.—The Central Paper Company, Inc., 42 Lafayette street, Newark, N. J., has recently established a branch at Trenton, operating a storage and distributing plant, with local

SETTING-UP EXERCISES

swell, before the day starts . . .



but expensive pastimes in your plant. Langston Slitters and Winders are so easily accessible for cutter set-up, lubrication and repairs, that time lost due to shut-downs is reduced to a minimum. Install Langston Slitters for economical, high-speed production.



SAMUEL M. LANGSTON COMPANY
Camden, N. J.

LANGSTON SLITTERS

offices at 17 East Front street. Extensive operations are planned in this section.

San Francisco, Calif.—The Crown-Zellerbach Corporation, 343 Sansome street, San Francisco, manufacturer of paper goods, with mills in Washington, has concluded arrangements for the purchase of the property and business of the Standard Paper Company, 83 Natoma street, San Francisco, and will consolidate with its organization. The purchased company has been engaging primarily as a distributor of paper goods, and it is understood will be continued along the same lines by the new owner.

Three Rivers, Que.—Following the recent acquisition of the Waterway Paper Products Company, Chicago, Ill., by the International Paper Company, 220 East 42nd street, New York, the news print mill of the first noted organization on the Drainage Canal, Chicago, has been closed down, and operations have been transferred by the parent company to its main news print mills at Gatineau and Three Rivers, Quebec, where increased production is being carried out. The Chicago news print mill consisted of two machines, running stock 132 inches and 204 inches in width, with a rated annual output of 30,000 tons of finished material per year. The Three Rivers mill of the company is now running on a basis of 712 tons of news print per day, the highest average yet developed, while the Gatineau mills have an output of 644 tons per day. The closing of the Chicago mill, it is stated, is assisting in maintaining full production schedules at the Canadian plants.

New Companies, Etc.

Philadelphia, Pa.—The King Card Company has been incorporated with a capital of $5,000, to manufacture and deal in card and paper stocks of various kinds. The incorporators are William G. King, Harry W. King and Daniel Freedman, 3206 Kensington Avenue, Philadelphia. Louis Freedman, 5615 Fentridge street, Philadelphia, is treasurer and representative.

Muskegon, Mich.—The Michigan United Paper Company, Muskegon, has filed notice of company dissolution under state laws.

New York, N. Y.—The Champagne Paper Corporation has been incorporated with capital of $20,000, to manufacture and deal in paper and paper products. The incorporators are Walter V. Landeck and Arthur A. Segall. The company is represented by Limburg, Riegelman, Hirsch & Hess, 160 Broadway, New York, attorneys.

Chicago, Ill.—The Des Moines Waste Paper Company, 59 East Van Buren street, has been incorporated with capital of 800 shares of stock, no par value, to deal in paper stocks. The principal incorporator is Harold Schilling.

New York, N. Y.—The Miles-Baumel Company has been incorporated with capital of 100 shares of stock, no par value, to deal in paper supplies and equipment. E. L. Kelley, 16 Court street, Brooklyn, N. Y., attorney, is company representative.

Mid-Summer Dullness in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

Indianapolis, Ind., August 11, 1930.—Extremely hot temperatures and the usual mid-summer dullness have combined to restrict the demand for all grades of paper in this territory. There have been some inquiries, but the general impression is they won't materialize until some time after the weather changes. It might be said that the local trade is not so much overstocked. Any overstocking has been due entirely to rather indifferent trade and lack of demand. There is not a particularly large amount of pessimism, though, and the trade believes fall will see a turn for the better.

There is one branch of the industry, however, that is profiting by the hot weather. This is the manufacturer and merchant handling a line of picnic supplies. Paper napkins, drinking cups, plates and similar merchandise is having a steady sale. Lines of supplies used in soda fountains, sundae cups, soda cups and the like are going over big.

Plan to Receive Russian Pulpwood

POTSDAM, N. Y., August 11, 1930.—Following the action of government officials in lifting the embargo on Russian pulpwood it was announced by paper manufacturers that plans would go forward towards receiving approximately 400,000 tons during the remainder of the year. The Dexter Sulphite Pulp and Paper Company, of Dexter, and the Racquette River Paper Company, Potsdam, are the principal importers in Northern New York with contracts calling for shipments aggregating 50,000 cords this year. A consignment of several thousand tons of the pulpwood has been held up at Quebec for the past week but with the ban removed arrangemnts are now proceeding to move it to the Unionville plant of the Racquette River Pulp and Paper Company.

George W. Sisson, Jr., president of the Racquette River Pulp and Paper Company, was among the prominent paper men who journeyed to Washington to protest against the ban on the pulpwood where he also represented the Eastern Manufacturing Company, of South Brewer, Me., the West Virginia Pulp and Paper Company and the International Paper Company. His firm was among the first in this section to experiment with the Soviet pulpwood and it has been found superior to any produced in this country or Canada for making fine paper. About a year ago the first shipment of the foreign product was received at the Unionville mill and the experiments resulted in the placing of additional contracts. Other companies holding large contracts for the imported material include the International Paper Company, West Virginia Pulp and Paper Company, Eastern Manufacturing Company, and the Hammermill Paper Company.

Although refusing to give details Mr. Sisson is credited by members of the pulp and paper company with having played a decisive part in bringing about a change in the attitude of government officials towards the foreign product. It was learned, however, that at the hearing the whole subject from the cutting to the loading of the pulpwood was discussed. Sixty-eight British and American vessels will be employed between now and November 1 in bringing the product to ports in this country and Canada. The Dexter Sulphite Pulp and Paper Company has already received two shipments via Sorel, Canada, and a third one is expected in about two weeks while the Racquette River Paper Company expects another huge cargo in about a week. Several ships held up by the embargo entered port last Saturday while a number of others partially unloaded were also emptied.

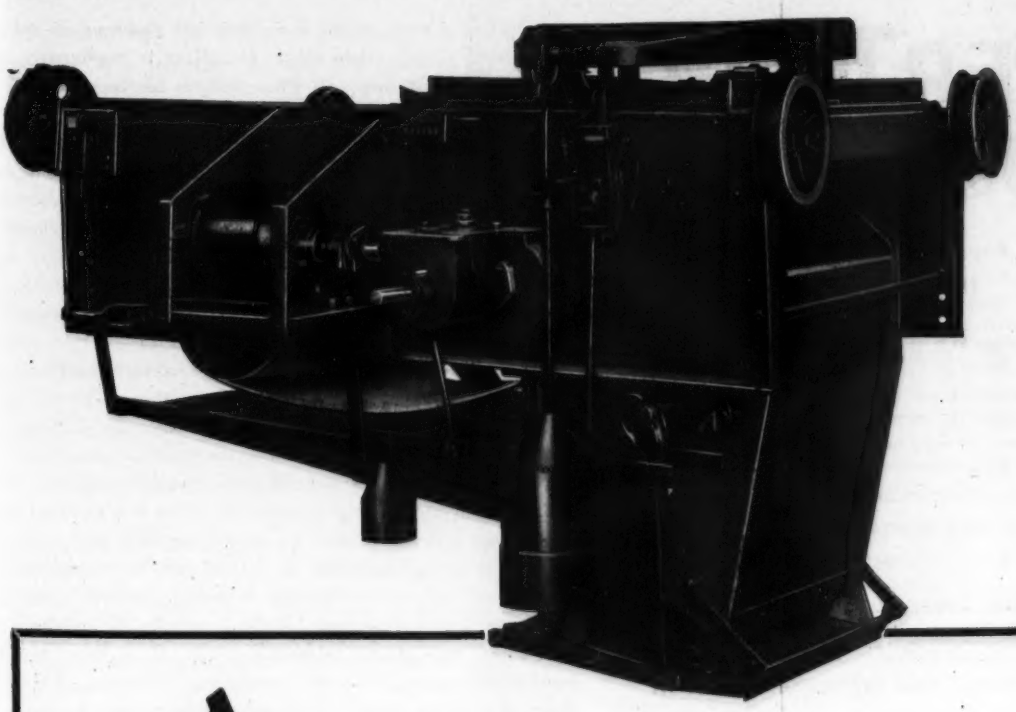
Discontinues Membership Campaign

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., August 11, 1930.—Announcement is made by officials of the International Brotherhood of Papermakers that endeavors to build up the membership of the organization have been suspended for the time being and F. P. Barry, vice president, has been notified that he will take up other duties. Mr. Barry had been in charge of the unionization work in many of the important mill towns for several months past and it is said that the campaign has been very successful. The program for increasing the membership was carefully planned a few months ago when organizers were sent to various sections of this country and Canada with expectations that a number of new locals would be formed.

Killed on Paper Machine

SALEM, Ore., August 8, 1930.—Elvin E. Rickard, 23, an employee of the Oregon Pulp and Paper Company, Salem, was instantly killed August 2 when caught on one of the big paper machines between two rolls. Workmen who saw him fall attempted to stop the machine in time to save him but were unsuccessful.



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Anglo Newfoundland Paper Co., Grand Falls, N. F.
Rising Paper Co., Housatonic, Mass.
Kimberly Clark Co., Neenah, Wis. Kimberly, Wis. Niagara Falls, N. Y.
Nekoosa, Edwards Co., Port Edwards, Wis.
Paterson Parchment Paper Co. Modena, Pa. Edgely, Pa.
Ste. Anne Paper Co., Beaupre, Que.
Price Bros., Ltd., Riverbend, Que.
Southern Paper Co., Moss Point, Miss.
West Virginia Pulp & Paper Co., Mechanicville, N. Y.
West Virginia Pulp & Paper Co., Piedmont, W. Va.

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TAPPI CRYSTALLIZES ITS ORGANIZATION

One cannot help but feel that real progress is being made in the pulp and paper industry when one reads the article entitled, "TAPPI'S New Divisional Organization" printed elsewhere in this issue. It has been the good fortune of the PAPER TRADE JOURNAL to be closely identified with the Technical Association for many years. Throughout this period we have had the impression that the association is an institution that is being built for permanence.

Irrespective of the many varying influences to which the industry or its respective branches have been subjected they have at no time retarded the upward growth of TAPPI. Every year has seen the association make contributions to the industry, a few at a time but all may be considered to be building blocks. The passage of time has enabled these accumulated stones to take on definite form rising above a very substantial foundation.

This foundation is briefly referred to in the opening remarks of the aforementioned article. It is in effect the voluntary efforts of a large number of very capable individuals, most of whom have had the benefits of the best engineering and chemical training that the leading technical schools of the world could give. These men had, in many cases, years of experience behind them when the association was founded in 1915.

Today nearly twelve hundred managers, superintendents, engineers and chemists are members of the organization. Like every industrial enterprise that has grown far beyond its early dreams the Technical Association has become confronted with new problems and growing pains.

In back of all the accomplishments of the Technical Association has been its standing committees. Too little has hitherto been said about them, their chairmen and personnel. Many of the committees that have existed in the past are in evidence, some with new names but with the same objects, now carefully defined to enable specific accomplishments to be effected.

Since the divisional idea is distinctly an innovation it is interesting to note the classification adopted. First we have *management* with its broad view of the main technical problems of the industry, such as education, waste, etc. Next is *engineering*, still considering the industry as a whole with its common problems of power and heat generation and distribution, equipment and construction.

Raw materials studied from an economic standpoint is a new subject for TAPPI. Particularly when the fibrous raw materials are considered there is no question that the economics related to wood supply is of the utmost consequence to the industry. Too little thinking has been given to the economic phases of raw materials by technical men in the past. The problem is entitled to real study.

The *operating division* is made up of committees that have long been in existence in one form or another. The new plan provides a well defined field for each committee. TAPPI has given a great amount of attention to the practical operating problems of the industry particularly in its special reports in which such problems are thoroughly discussed by the best qualified men. The *testing* division includes the committees that have given the association so much prestige as an authority on estimating the physical and chemical properties of paper, pulp and chemicals. The *research and development* division includes the excellent abstracts and bibliography committee of Dr. C. J. West and his capable associates. The use requirements committee should do much to lead the industry out of its overproduction status by enabling it to have a better understanding of its market requirements. The permanence and durability committee has the definite job of keeping the public informed concerning the research work that is being done in investigating this important problem.

The Technical Association is entitled to commendation for putting its house in such excellent order. Good work will be done and the association's reputation will be still further enhanced.

FRENCH PAPER INDUSTRY EXPANDS

The capital invested in the French paper industry has reached rather surprising figures during the past few years. New companies have been founded and according to a report received in the U. S. Department of Commerce, existing equipment in the older plants has been increased and brought up to date. At least seven machines have been installed for the manufacture of kraft wrapping paper and the same number for news print, while half a dozen or more have been added for the manufacture of various other papers.

Capital increases by the older companies during 1929 amounted to more than 75,000,000 francs (approximately $2,940,000), while 30,000,000 francs ($1,176,000) was invested in new companies. These figures are considered conservative and are probably short of the actual amount invested, since they apply to only thirty companies. A report recently made to the Societe Scientifique du Dauphine by M. Laroche-Joubert, director of the paper industry of Grenoble, stated that during the years 1918 to 1928, 126 new paper making machines, capable of producing 1,663 metric tons (1 metric ton—2,205 pounds) per day, had been installed or ordered by French mills.

This material was used in part to replace worn out machinery and also the 19 machines destroyed during the German occupa-

tion, but more than half of the entire number, and considerably more than half from the standpoint of production, went to swell the previous output. M. Laroche-Joubert gives the following details regarding the possible production of these 126 machines: Wrapping paper to be increased by 587 tons per day; cardboard by 397 tons; news print paper by 225 tons; cigarette paper by 20 tons; and other papers by 404 tons.

Taking into consideration these increases in domestic production, it would seem as though a reduction in imports could be expected, and receipts in 1927 and 1928 were much lower. In 1929, however, imports of news print paper increased to 223,399 metric tons and other papers to 25,195 tons, bringing the total up to 1,928,204 tons, a gain of 50 per cent over the preceding year and of 20 per cent over 1926, which, until 1929, was considered the record year for French paper imports.

News Print From 100 Per Cent Hemlock

11 Wellington Ave., San Anselmo, Cal.

Editor, PAPER TRADE JOURNAL,

In your issue of July 17 I notice in an article from your Toronto correspondent, that experiments are being carried on at the University of Columbia with a view of establishing a process that will make it possible to utilize 99 per cent hemlock in the manufacture of newsprint.

Your readers might be interested in knowing that in 1919 when I was manager of the Ladysmith, Wisconsin plant of the Menasha Paper Company, we made for several months all of our news print from 100 per cent hemlock and the news print for the *Milwaukee Journal* at that time was made at this plant with 100 per cent hemlock as well as other newspapers. A prominent manufacturer of news print who is operating today one of the largest news mills in the country did not believe at the time such a thing was possible but after investigation, he verified the fact. The sheet could hardly be detected from one of spruce or standard content and the reason we quit making a 100 per cent hemlock sheet was because conditions changed later on which made it more economical to use spruce, although I believe that conditions in certain parts of the country have since changed whereby the complete use of hemlock is now practical and economical.

Very truly yours,

HARRY BALLOU.

I. P. Mill at Corinth To Go on Full Time

[FROM OUR REGULAR CORRESPONDENT]

CORINTH, N. Y., August 11, 1930.—Full time operations are expected to be resumed within a few days at the local plant of the International Paper Company following the lifting of the embargo on Russian pulpwood. The settling of the controversy has given the firm assurance of a continued flow of the product which incidentally means uninterrupted operations for some time to come. Employees inclined to the belief that the embargo meant nothing but hard times have already voiced approval of the action of the government. The full flow of wood to the local yards will mean the employment of many additional workers to aid in the unloading of from forty to fifty cars of the Russian product daily.

From a reliable source it was learned that the company plans to deposit about 90,000 cords of the imported product in the local mill yard before the arrival of cold weather. Approximately 300 cords are required per day in the full operation of the mill when sufficient water in the river is available for full grinding operations. All of the Russian pulpwood used here thus far has gone into the manufacture of the finer grades of paper while the limited quantity of news print now manufactured here is made mostly from the Canadian product.

Paper Production Lower for June

According to identical mill reports to the Statistical Department of the American Paper and Pulp Association from members and cooperating organizations, the daily average paper production in June showed a decrease of 1 per cent under May 1930, and a decrease of 8 per cent under June 1929. The daily average wood pulp production in June, registered a decrease of 4 per cent under May 1930, and a decrease of 6 per cent under June 1929.

The June production of news print, uncoated book, paper board, wrapping, bag, writing, tissue and building papers registered a decrease under June 1929 output. The production of all major grades of paper during the 6 month period ending June 1930, registered decreases under the totals for the same period of 1929. Shipments of all major grades, excepting hanging paper, also registered decreases during the 6 month period of 1930 as compared with the same period of 1929.

All grades of paper, excepting bag, wrapping and paper board, showed increases in inventory at the end of June 1930, as compared with the end of May 1930, and with the end of June 1929.

Identical pulp mill reports for the 6 month period ending June 1930, indicated that 9 per cent more mitscherlich sulphite pulp, 4 per cent more bleached sulphite pulp and 2 per cent more kraft pulp was consumed by reporting mills than for the same period of 1929. The total shipments to outside markets of all grades of pulp during the first 6 months of 1930, were approximately 7 per cent below the total for the same period of 1929.

News grade and easy bleaching sulphite, kraft and soda pulps were the only grades that showed a decrease in inventory at the end of June as compared with the end of May 1930. As compared with June 1929, groundwood and soda pulps were the only grades whose inventory was lower than at the end of June 1930. The tonnage increase in the other grades, however, was not large.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JUNE, 1930

Grade	Production tons	Shipments tons	Stocks on hand end of month tons
News print	108,398	106,883	29,507
Book (uncoated)	72,648	71,762	62,899
Paper board	178,543	182,659	58,977
Wrapping	43,969	45,227	45,148
Bag	13,707	14,559	5,251
Writing, etc.	27,083	23,991	51,273
Tissue	13,896	12,235	12,277
Hanging	4,811	3,910	5,172
Building	6,072	5,704	4,711
Other grades	22,061	20,869	19,261
Total—All grades	491,188	487,799	294,476

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JUNE, 1930

Grade	Production tons	Used during month tons	Shipped during month tons	Stocks on hand end of month tons
Ground wood	90,348	81,100	1,718	103,541
Sulphite news grade	34,104	31,532	3,112	7,841
Sulphite bleached	25,048	21,903	2,043	4,600
Sulphite easy bleaching	2,954	2,886	249	947
Sulphite Mitscherlich	6,778	5,743	821	1,541
Kraft pulp	28,269	24,463	4,047	7,937
Soda pulp	20,990	13,230	7,904	3,444
Pulp—Other grades	98	.....	107	12
Total—All grades	208,589	180,857	20,001	129,863

Norwegian Pulp Situation Unfavorable

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 13, 1930.—The Bamble wood pulp mill has closed down in Norway and its workers laid off as a result of the unfavorable position of the chemical pulp market, according to unofficial reports received here. Conditions in the Norwegian pulp and paper markets have been far from satisfactory for some time, but operation at the mill was maintained in the hope that the market would improve. As the immediate future is not very encouraging the management decided to close down.

Marcy Rod Mills improve stock and lower production costs

IN THE RECENT ENLARGEMENT of a large Kraft plant two more Marcy Rod Mills have been added. The additional equipment was installed because of the uniformly satisfactory results obtained from the first Marcy Mill.

The installation now consists of three 7′ x 16′ Marcy Rod Mills especially adapted for beating Kraft pulp.

These three units are now beating 150 tons of Kraft pulp per day, raising the average strength test from 60 to 95—equivalent to three hours average beater treatment.

The bursting strength of the paper has been raised 5% and the tearing strength raised 10%. A cleaner sheet has also resulted on account of the elimination of shives and fibre bundles because of the rod mill action.

The three Marcy Rod Mills require 576 H.P. to accomplish this result. To attain the same result with the old method of treatment would require 20 one ton beaters with a power consumption of 1500 H.P.

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MASSCO

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Multiple Stage Bleaching Process

By Emil Heuser[1]

One of the most characteristic features in the development of bleaching wood pulp during recent years is the practical application of the multiple stage process. This is accomplished by dividing up the amount of total bleach liquor required into two or more stages with intermediate removal of the products of reaction by washing with water or alkalis[2]. Its advantages have been widely recognized by practical mill men, and manifold modifications of applying the multiple stage process are now in use in the pulp mills. This development acquired a further impulse when it was realized that bleaching in high density had many advantages over the low density process, and naturally, these advantages became particularly noticeable since such high consistencies as 17 per cent and more were commercially possible and especially when such high consistency bleaching was combined with bleaching in more than one stage, as for example, in the Thorne bleaching process.[3] The latter process can be applied in several variations: for instance, the first stage may take place at high density, say at 17 to 25 per cent, whereas in the second the consistency may be 6 to 10 per cent, as usually applied in Bellmer bleaching; or both stages may take place at high density, using either the same consistency for both stages or different, such as 25 per cent and 18 per cent.

Optimum Bleaching Conditions

In all cases part of the total bleach requirement has to be used in the first stage leaving the rest for final bleaching in the second or further stages, but in all cases the question arises as to how much of the total bleach is to be used in the first stage. In other words, does it make any difference how much is taken for the prebleaching or will the use of 40, 50, 60 or 70 per cent etc. of the bleach consumption render different results?

Systematical studies of this question in the laboratory under exactly controllable conditions, and the application of the principles revealed by such studies in large scale bleaching, are capable of giving an answer to this question, and the results may be of interest to all who are operating multiple stage bleaching processes. The answer to the question is that it is very important how much of the total bleach is used in the first stage and that neglecting this point would mean to deprive oneself of the maximum advantages involved in the process.

That part of the bleach which is to be used in the first stage is a definite amount, dependent on the chemical properties of the unbleached product, chiefly its bleach consumption, and pulps of different makes, i.e. from different sources, require different amounts. Since applying this fixed amount, which has to be determined for each pulp, produces the best results, not only as far as the chemical and physical properties of the final product are concerned but also as regards the amount of bleach to be saved compared with the one stage process, we call this amount the optimum amount, and applying it means bleaching under optimum conditions.

It can be easily demonstrated that the properties of the bleached pulp are adversely affected if the optimum amount is not used, and amounts either above and below the optimum are used instead.

The optimum amount of bleach to be used in the first stage, for a given pulp, will be found by the two-stage bleaching of a series of samples, using in the first stage different percentages of the total bleach consumption, i.e. of that amount which would be required for bleaching the pulp in one stage and low consistency up to the color desired. For example, the bleach consumption is first ascertained either by determination of the so-called permanganate number or the chlorine number of the unbleached pulp or by actual bleaching of a sample, on laboratory scale, at low consistency and at the usual temperature (e.g. 35-40 deg. C.) until the requisite color has been obtained. Different percentages—for instance 30, 40, 50, 60 and 70 per cent—of the total bleach requirement are now applied to samples of the unbleached pulp at high density and a certain temperature, i.e. in the cold, and the pre-bleaching is finished after all bleach has been exhausted. The partly bleached samples are carefully washed and then bleached in the second stage at high or at low density, as the case may be, with so much bleach powder as will be required for bleaching, at a given temperature, the color desired.

The total bleach consumption required for bleaching in two stages is then calculated for each of the samples and the figures obtained are graphically plotted against the *first* stage bleach additions. In this way we obtain a curve which shows a minimum. The minimum position thus represents that amount of bleach which, when bleaching in large scale, has to be added in the first stage in order to adjust the total amount required, to the lowest possible and, consequently, to obtain the maximum bleach saving.

The method described may be illustrated by an actual example with high consistency in the first stage and low in the second stage.

1. Total bleach consumption in one stage. A sample of sulphite pulp was bleached in one stage, at 6 per cent density (calculated bone dry) and 35 deg. C., until the standard color had been reached, and the total bleach consumption was found to be 13.2 per cent bleachpowder.

2. Bleaching with different amounts of bleachpowder in the first stage. Five samples of the same (unbleached) sulphite pulp, 250 grams each, were bleached at 17 per cent B. D. density and room temperature (22 deg. C.) with 30, 40, 50, 60 and 70

[1] Member TAPPI, Manager of Research, Canadian International Paper Co., Hawkesbury, Ont. The experiments described in this paper were carried out by Mr. H. Lewis, B.Sc., A.C.T.C.

[2] E. Heuser and W. Niethammer, Papierfabr. 21: Special Number, page 52 (1923). Previous publications are listed there also.

[3] J. Funcke, Paper Trade Journ. 55: 49 (1926); E. Heuser and R. S. Baker, Papierfabr. 25: (1927).

per cent of the total amount required for one stage (13.2 per cent bleach powder), i.e. 3.99, 5.30, 6.61, 7.94 and 9.31 per cent bleachpowder until the bleach liquor was exhausted. After washing, five partly bleached samples of different degrees of color were obtained.

3. BLEACHING IN THE SECOND STAGE. The first partly bleached samples were bleached to the same color as obtained by one stage bleaching, at 6 per cent density and 35 deg. C., with a bleach addition corresponding to the differences between the actual bleach consumption for one stage bleaching (13.2 per cent bleach powder) and the amounts used in the first stage less 20 per cent for part bleached pulps of 40-60 per cent B. C. and 15 per cent for pulps part-bleached with more or less than these amounts of bleach, which makes approximate allowance for the saving to be expected[4].

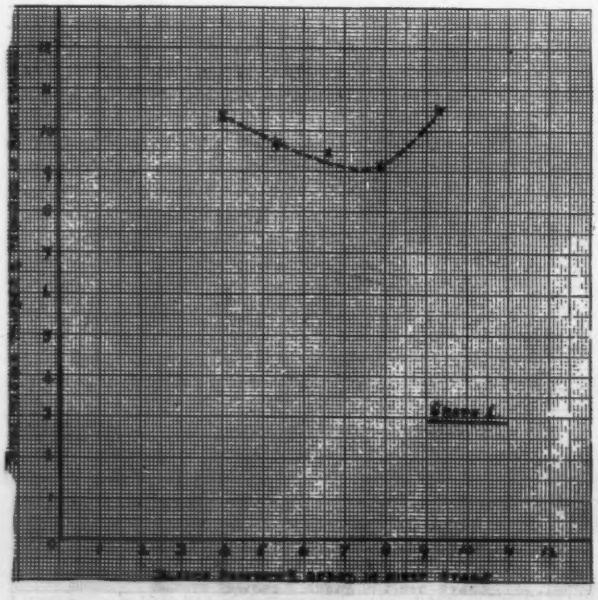
The bleaching data obtained from these experiments are given in Table 1.

TABLE 1

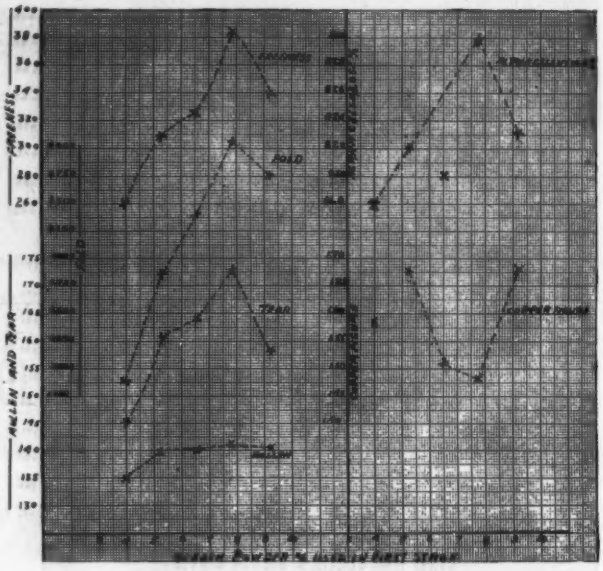
	Experiments I 30%	II 40%	III 50%	IV 60%	V 70%
Actual bleach consumption one stage.	13.2	13.2	13.2	13.2	13.2
Bleach powder used in first stage....	3.99	5.30	6.61	7.94	9.31
Difference.....:	9.3	7.9	6.6	5.3	3.9
Less allowance.....	2.0	2.6	2.6	2.6	2.0
Actual addition in second stage.....	7.3	5.3	4.0	3.7	1.9
Dump tests.....	0.95	0.90	1.15	1.50	0.66
Actually consumed in second stage...	6.35	4.40	2.85	1.20	1.24
Bleach powder used in first stage....	3.99	5.30	6.61	7.94	9.31
Bleach powder in both stages.....	10.34	9.70	9.46	9.14	10.55
Actual bleach consumption for 1 stage	13.2	13.2	13.2	13.2	13.2
Saving of bleach powder.....	2.86	3.50	3.74	4.06	2.65
Per cent saving of bleach consumption	21.7	26.5	28.3	30.8	20.1

In Graph 1 the amounts of bleach powder required for both stages are plotted against the amounts used in the first stage. The minimum position of the curve is at about 7.9 per cent bleach powder for the first stage, this point representing the maximum of saving (30 per cent). In other words, the optimum is obtained when about 60 per cent of the total bleach required for one stage bleaching is applied in the first stage. If the total of the *two stage* process then is 9.14 per cent the amount used in the first stage, calculated on the total of 9.14 per cent, hence is 87 per cent, leaving 13 per cent for the second stage.

[4] The maximum amount actually saved is mostly 25 per cent to 30 per cent for pulps of the type in question.



GRAPH I



GRAPH II

Graph 1

At the same time it is obvious from Table 1 and Graph 1 that the savings are reduced quite considerably when less or more than the optimum percentage is used in the first stage.

As mentioned above, the maximum bleach saving coincides with the best physical and chemical properties as may be seen from Table 2 and Graph 2. The physical properties were determined at 65 deg. humidity and 21 deg. C. after testing in an Abbé ball mill under specified conditions, the results for Mullen, Fold and Tear being given in arbitrary units whereas those for Freeness have their usual significance.

TABLE 2

Bl. cons. per ct. in 1st stage	Bl. powder per cent in 1st stage	Bl. powder in both stages, per cent	Bleach saving, per cent	Physical properties: Mullen	Tear	Fold	Freeness	Chemical properties: Alpha cellulose, per cent	Copper figure
30	3.99	10.34	21.7	135	145	1869	260	86.8	1.58
40	5.30	9.70	26.5	140	161	1854	310	87.2	1.68
50	6.61	9.46	28.3	140	164	3408	325	87.0	1.51
60	7.94	9.14	30.8	142	173	4059	385	88.0	1.48
70	9.31	10.55	20.1	141	158	3743	340	87.3	1.68

Graph 2

If the second stage is to be bleached at high density, such as 17 per cent instead of 6 per cent, the optimum amount to be used in the first stage, and also the amount to be used in the second stage, remains the same as previously. The high density, however, is capable of increasing the speed of reaction, allowing either reduction of temperature or of bleaching time.

An interesting fact in connection with the optimum addition is related to the color of the first stage dump liquor. The color of this liquor gradually darkens with increase of first stage bleach addition (in our example with 30, 40, 50, etc. per cent of the total bleach), attains a maximum depth of color with the optimum addition and then very rapidly lightens with further increase. This indicates that the chemical reaction between the incrusting substances and the hypochlorite reaches a maximum when the optimum amount of bleach is added. That with further increase of bleach the color of the dump liquor becomes lighter evidently is due to the fact that now part of the excess of bleach over the optimum amount oxidizes the

colored reaction products more and more to colorless compounds.

This change in color of dump liquor can be connected with the change in color of the partly bleached pulp. Its color brightens up rapidly with increase in bleach added until the optimum amount; then, further bleach addition only causes a gradual brightening up in color. Thus, the optimum addition is that at which the change in rate of change of color is the maximum.

This relationship between the color of the dump liquor and that of the part-bleached pulp forms the basis of a rapid approximate method for the determination of the bleach addition in the first stage for optimum conditions and may often serve for first information and even to replace the more elaborate test described above.

Already years ago several authors drew attention to this relationship. Thus, E. Opfermann[5] suggested the use of the maximum depth of color of the dump liquor as a means for determining the point when the part-bleached pulp has to be washed out. E. Hochberger[6] stated that the maximum in color (of the dump liquor) coincides with a distinct change in the color of the part-bleached pulp, and this coincidence is indicated by a sharp break in the curve of the bleaching time. If more bleach is added than corresponds to the maximum degree of the dump liquor the reaction is very distinctly retarded. L. Rys[7] stated that the more organically combined chlorine found in the dump liquor the darker will be its color.

Influence of Consistency on the Two Stage Bleaching Process

In a recent publication R. S. Hatch[8] advocates a two stage bleaching process in which the first stage is carried out in a low density of 3 to 3½ per cent and the final stage in a high density of 15 per cent. Hatch claims that this way of bleaching, i.e. low density in the first and high in the second, is the right and logical thing to do.

As this is in contrast to our own experience we have carried out investigations under the conditions (1) which Hatch has described in his paper and (2) under such which we have found to be the optimum, bleaching to the same standard color in both cases. Hatch is of the opinion that we should be able to effect the greatest chlorine saving in two stage bleaching by using 20 to 30 per cent of the total chlorine in the first stage, exhausting in twenty to thirty minutes at room temperature, whereafter the pulp is washed out. Since only 20 to 30 minutes for exhaustion of the bleach are available and this short time would, in Hatch's opinion, not suffice to mix the pulp thoroughly enough at a high consistency, he choses low density for the first stage such as 3 to 3½ per cent. The second stage is carried out at 15 per cent density, usually at room temperature and only in extremely cold weather at raised temperature.

We have carried out two experiments under the same conditions, i.e. such as described above, on two unbleached sulphite pulps, total (one stage) bleach consumption of the pulps 13.2 and 13.4 per cent bleachpowder respectively.

First Experiment

First Stage. Approximately 25 per cent of the total bleach consumption (of 13.2 per cent) = 3.28 per cent bleachpowder; 3 per cent density; 22 — 25 deg. C.

Second Stage. 8 per cent bleachpowder added (7.65 per cent consumed); 15 per cent density; 22 — 25 deg. C. The total amount of bleach consumed in both stages was [3.28 + 7.65] = 10.93 per cent which, compared with the one stage total amount of 13.2 per cent corresponds to a saving of 18 per cent or 2.4 per cent bleachpowder.

[5] Wochenbl. f. Papierfabr. 52: 1644 (1921).
[6] Papierfabrikant 26: Snecial Number, page 69 (1928).
[7] Paper Trade Journ. 85:61 (1927); also Papierfabr. 26:258 (1928).
[8] R. S. Hatch, Paper Trade Journal 58:135 (1929).

Second Experiment

First Stage. Same conditions as in the first experiment. Bleachpowder used 3.34 per cent.

Second Stage. Same condition as in first experiment. Bleachpowder added: 8 per cent (7.40 per cent consumed). Total amount consumed in both stages 3.34 + 7.4 = 10.74. Saving compared with one stage consumption (13.4 per cent) was 20 per cent or 2.7 per cent bleachpowder.

When we now bleached the same pulps in accordance with the principles explained above, i.e. with the optimum amount of bleach, at high consistency in the first stage and at low consistency in the second we found the saving to be considerably higher and the quality of the final product to be better than that bleached according to Hatch's suggestions.

1st Experiment. The optimum amount of bleach on this pulp was found to be 50 per cent of the total (one stage consumption).

First Stage. 50 per cent of the total bleach consumption (13.2 per cent) = 6.60 per cent bleachpowder; 17 per cent density; 22 — 25 deg. C.

Second Stage. 3 per cent bleachpowder added (2.55 per cent consumed); 6 per cent density; 38 — 40 deg. C. Total amount consumed in both stages: 6.60 2.55 = 9.15. Saving compared with one stage bleaching (13.3 per cent) was 31 per cent or 4.15 per cent bleach powder.

2nd Experiment

First Stage: Same conditions as in first experiment. Bleach powder used 6.68 per cent.

Second Stage. Same conditions as in first experiment. Bleach powder added 8 per cent (2.89 per cent consumed). Total amount consumed in both stage: 6.68 + 2.89 = 9.57 per cent Saving compared with one stage bleaching (13.4 per cent) was 28 per cent or 3.8 per cent bleach powder.

The average physical and chemical properties of the final products are compared in table 3.

TABLE 3

System	Saving of bleach per cent	Mullen	Tear	Fold	Freeness	Alpha cellulose per cent	Copper figure
Low-High	18 to 20	135	145	2218	270	85.7	2.17
High-Low	28 to 31	133	164	2668	310	87.4	1.18

When we compare the figures we find the saving as well as the physical and chemical properties of the pulp bleached under optimum conditions (high-low system) to be higher and better than when bleaching according to Hatch's suggestion. In other words, the better results are accomplished by applying the optimum amount of bleach in high density in the first stage. These facts may be explained as follows:

As regards the saving of bleach we may consider the bleaching process to consist chiefly of two consecutive reactions, the primary reaction being the formation of colored soluble products, through oxidation, chlorination or both processes, and the secondary reaction to consist of their conversion to colorless products, through oxidation. Similar to all consecutive reactions, with increase in total reaction, the concentration of the intermediate product increases attains a maximum and then decreases again. In the case of bleaching the intermediate product is the colored soluble products, and this change is clearly shown by the color of the dump liquor from the first stage, and, obviously, the maximum bleach saving will be obtained when the maximum amount of colored soluble products are removed in the inter-stage washing, i.e. with the optimum bleach addition in the first stage, as already mentioned. With a less bleach addition than the optimum amount the incrustant material remaining after the first stage, will form the primary reaction product in the second stage and will consume bleach in its conversion to colorless compounds and hence the bleach saving will be low. On the other hand, if more than the optimum amount is added in the first stage some of the primary products will be converted into colorless compounds in the first stage thus again lowering the bleach saving. Thus, from theoretical considera-

tion, apart from its practical demonstration, it is apparent that the maximum bleach saving is obtained at a certain bleach addition in the first stage, i.e. the optimum amount, and that in two stage bleaching it is highly advantageous to use this amount, which is specific for each pulp.

In the case of the pulp used in the comparative investigation on the low-high and high-low bleach processes the optimum bleach addition in the first stage was found to be 50 per cent of the one stage bleach consumption and hence when using this amount, as in the high-low experiment, a greater bleach saving was obtained than when using less than the optimum amount, such as 25 per cent, as in the low-high experiment, with the consequential beneficial effect on the pulp quality.

It would, of course, be very poor practice to apply the optimum bleach addition in the first stage when the density is low. For, in low density it would take either a long time in the cold, or would require the temperature of the bleach to be raised in order to exhaust this amount of bleach within a convenient mill time. In this respect it must be emphasized that simultaneous with the main bleaching reaction, i.e., the removal of the incrustants and their discoloration, is the side reaction of cellulosic attack, and unnecessary prolongation of the bleaching time causes increased degradation of the cellulose, hence to apply the optimum amount in the cold in low density would necessarily involve an adverse effect on the pulp quality of the bleached product. On the other hand, the use of increased bleaching temperature would be uneconomical with respect to steam consumption.

Therefore, in order to be able to apply the optimum amount of bleach in the first stage and consequently to obtain the best quality and the maximum bleach saving, the most scientific and economical method is the use of high density in the first stage.

Improve Plants in Norway

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 13, 1930.—The Union Company, with headquarters at Oslo and operating a number of paper mills in different parts of Norway, is at present making a number of improvements at its mills with a view to bringing its equipment up to date, according to a report to the Department of Commerce from Commercial Attache Lund, at Oslo.

One new news print machine is expected to come into production very soon, and another one has been ordered, while it is understood that a contract for a third machine will be placed within a year. These new machines are to replace old ones, and will not, of course, represent entirely new production. The company is also building a modern ground wood plant for an annual production of 50,000 tons, which will bring the company's production of ground wood pulp up to 75,000 tons of wet pulp yearly. Minor changes are being made in the other mills of the company, all of which are intended to make for more efficient operation.

Dr. Francis L. Simons Joins Skinner & Sherman

Skinner & Sherman, Inc., announce the addition to their staff of Dr. Francis L. Simons as director of research. Dr. Simons was formerly a member of this organization, but for the past two and one half years has been director of research at the Rogers Fibre Company, Kennebunk, Maine. He is a graduate of Brown University and received his doctor's degree from Yale. He has specialized in organic and physical chemistry and has published several papers on catalysis and the chemistry of colloids.

Dr. Simons' training and experience are such that he brings to the research department of Skinner & Sherman, Inc. a very practical viewpoint which is essential in problems of industrial research.

Papeteries Navarre Joins TAPPI

The first company of France to become a Corporate member of the Technical Association of the Pulp and Paper Industry is the Papeteries Navarre of Lyon, France, the largest paper company of that country.

Papeteries Navarre is composed of eighteen mills located in all parts of France. The location, capacity and grades of paper made in these mills are indicated as follows:

Mill	Pounds Daily Output	Product
Champ sur Drac	80,000	Board
Chenevieres	20,000	Tissues and specialties
Evergnicourt	30,000	Kraft
Galas	20,000	Blotting and vegetable parchment
Godoncourt	40,000	Covers
Grand Quevilly	80,000	Book
Melleville	20,000	Light weight bond
Monfourat	40,000	Esparto
Papault	20,000	Coating stock
Le Penitent	30,000	Art paper
Roanne	70,000	Writing
Saint Vincent	20,000	Ledger
Tallend	20,000	Writing and filter
Vedene	10,000	Celluloid tissue
Voiron	10,000	Rag papers
Villeneuve	20,000	Supercalendered book
Wesseling	10,000	Bank paper
Total	540,000	

This company also produces 125 tons daily of mechanical pulp and 60 tons daily of sulphite pulp.

The main office of the company is at 52 Avenue Marechal Foch, Lyon (Rhone), France.

Andre Navarre is the managing director and president. A central research laboratory is located at Voiron (Isere), France, and is considered to be one of the most up to date and progressive laboratories of Europe. In addition to a well established distributing system and an export service, the company has a large number of subsidiaries including envelope factories, photographic paper plants, etc., and at the present time it is building an esparto pulp mill and another mill to prepare sulphite pulp from rayon. In each mill new processes are to be used which have been recently developed in their research laboratory.

R. Filliat, who has been in the United States this summer, is director of the export service of Papeteries Navarre and will be their representative in TAPPI.

New TAPPI Members

C. A. Anderson, Chemist, Nashua River Paper Company, Pepperell, Mass.

H. B. Dawson, Chemical Engineer, Hammermill Paper Company, Erie, Pa.

Leo Friedman, Assistant Professor of Chemistry, University of Oregon, Eugene, Ore.

J. J. Healy, Jr., Chemical Engineer, Merrimac Chemical Company, Boston, Mass.

Camillo Levi, Director, R. Stazione Sperimentale Carta e Tessili, Milan, Italy.

F. P. Lyden, Paper and Pulp Consultant, Knickerbocker Building, New York.

G. W. Miles, Chemical Expert, Boston, Mass.

H. C. Morris, Technical Service, Naval Stores Supplies, Hercules Powder Company, Wilmington, Del.

H. H. Rinehart, Foreman, Johns Manville, Dayton, Ohio.

A. G. Stone, General Manager, Continental Paper and Bag Corporation, Rumford, Me.

Fred Wohlers, President, Container Testing Laboratories, New York.

Lincoln Paper Mill Being Sold

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., August 11, 1930.—Public sale of the Lincoln Paper Mill plant and equipment at Elkhart, Ind., now is in progress at the offices of the company. The property is being sold piecemeal. The company has been in bankruptcy for two years.

A Microscopic Study of Wallboard Structure

By Florence Hooper

Ia

Ib

The increased demand for insulating materials for building purposes, together with the attention recently devoted to the utilization of agricultural wastes, has resulted in the commercial production of insulating wallboard from a number of fibrous vegetable wastes. Wood waste, sugar cane bagasse, wheat straw, flax straw, extracted licorice root, and cornstalks are now utilized in this way.

The production of the board consists, first, of pulping the raw material, and second, of forming the board from the pulp. Pulping is accomplished by several different processes. The pulp is coarser than paper pulp, is usually higher in lignin and pentosans, and is less highly hydrated. The boards in many cases are formed by the separation of the pulp from water suspension on modified Fourdrinier or cylinder machines.

The insulating properties of the commercial boards from fibrous materials are approximately the same. Boards prepared in the Iowa State College Chemical Engineering laboratory from mechanically separated cornstalk pith show insulating properties much superior to those of boards prepared from fibrous materials. The various boards as now produced differ somewhat as to strength.

A microscopic study of the structure of the various boards was undertaken to show any existing correlation between the structure, method of formation, and properties of the boards.

Experimental

Small blocks of various wallboards which had been softened by soaking in acetone were embedded in paraffin. Sections, 30 to 50 microns thick, were cut both parallel and perpendicular to the surface plane of the board. The paraffin was removed with xylol and the sections were mounted in Canada balsam. The mounts were examined microscopically and photomicrographs were prepared. (Plates I-VIII)

It was noted that the various tissues in any given board show

* Contribution from the Department of Chemistry, Iowa State College, Ames, Iowa.

IIa

IIb

III

some evidence of strain, but, in general, retain their identity; i.e. pith cells, tracheids, etc., may be distinguished. The structure of a board is, apparently, partly determined by the structure of the tissues used in its preparation. Thus the difference in properties shown by corn pith board is probably to be attributed to the original subdivision of the tissue into large, thin walled, isodiametric cells. The material used in the preparation of a board may be determined by miscroscopic examination to the degree that it is possible to recognize the individual tissues of various plants. Thus, Plates VII and VIII unmistakably represent boards prepared from wood.

The arrangement of the tissues in the several boards are very similar. In all cases, the fiber cells and groups of such cells cross each other at various angles and tend to lie with long axes parallel to the surface of the board. Groups of fiber cells are more common than single cells in all boards examined except in "Masonite" (Plate VIII). In those boards containing parenchymatous tissues (Plates I-VI) the individual parenchyma cells, or more often groups of cells, are variously scattered about among the fibers. In no case was a definite arrangement of parenchyma cells with respect to fiber cells found to be characteristic of a board.

IVa

VIb

Va

Vb

VIIa

VIIb

Explanation of Plates

Plates I-III are photomicrographs of boards prepared by the Chemical Engineering Department of Iowa State College. Plates IV-VIII are photomicrographs of commercial wallboards. (a) Indicates that the section was cut parallel to the surface of the board; (b) indicates that the section was cut perpendicular to the surface of the board.

Plate I. Cornstalk board formed on a modified Foudrinier machine.

Plate II. Lime cooked cornstalk board formed on a cylinder machine. The dense appearance of this board is due to residual lime.

Plate III. Cornstalk pith board formed on a stationary screen.

Plate IV. "Maizewood," made from cornstalk pulp on a modified Fourdrinier machine.

Plate V. "Celotex," made from sugar cane pulp on a cylinder machine.

Plate VI. "Inso Board," made from wheat straw pulp on a cylinder machine.

Plate VII. "Insulite," made from wood waste pulp on a cylinder machine.

Plate VIII. "Masonite," made from exploded wood fiber on a modified Foudrinier machine.

Safety Check Paper for Pulp Testing Report

Skinner & Sherman, Inc., has adopted the use of safety check paper for its wood pulp certificates, thus making alterations impossible. The importance and universal acceptance of these certificates as a basis for wood pulp transactions make it advisable to take all possible precautions against tampering with the figures by unscrupulous persons. This innovation should be of real value to the pulp and paper industry.

Crown-Zellerbach Gold Certificates Ready

Permanent certificates of the $10,000,000 Crown Zellerbach 10-year 6 per cent gold debenture issue are now ready for delivery in exchange for temporary debentures, according to announcement from officials August 1. Temporary debentures may be exchanged at the bank of California in San Francisco, the Continental Illinois Bank & Trust Company, Chicago, and the Bank of American, New York.

VIIIa

VIIIb

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For photostatic copies of articles appearing in the Abstract Section, address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B Streets, Washington, D. C. The charge for this service is 25 cents per page. Copies of United States patents may be obtained from the U. S. Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Beating

Adjusting Means for Beater Rolls. Ralph Wood assignor to Scott Paper Co. U. S. pat. 1,716,407, June 11, 1929.—The invention relates to means for adjusting beater rolls and recording the extent of the adjustment. A worm wheel constituting a nut and screwed on a threaded rod is held against movement in the direction of the said rod. A cam secured to and moving with the worm wheel operates the indicating arm of a suitable recording instrument.—A.P.-C.

Beating. III. Direct Measurement of the Water of Imbibition of Paper Stock. M. Nakano. Cellulose Ind. (Tokyo) 4, 300-304 (1928).—No difference in the water content of sheets made of the stock whether boiled or unboiled, after pressing them at 20° C., was noted. The water of imbibition is very small, and is therefore difficult to determine by any pressing method.—A.P.-C.

Hydration, Paper Formation and Strength. G. Porrvik. Papierfabr. 27, 372-383 (1929).—The degree of greasiness (which is considered synonymous with "degree of hydration") is determined by means of the water content of pulp. The water content is divided into three kinds: external capillary water, internal capillary water and fiber-wall water and their importance during grinding is discussed. The combining together of fibers to form paper is really not a mechanical felting process but a colloid-chemical sizing phenomenon. The importance of grinding lies in increasing the degree of swelling of the fiber wall by mechanical means, where by the latter is rendered partly more adhesive and partly more plastic. The fiber wall consists of several layers. By swelling the outer one the adhesive capacity of the fibers, and therefore the strength of the paper, is increased, whereas if the sub-layer swells, the fiber is split up into fibrils and a weaker paper results. Grinding is not a uniformly continuous process but takes place in three stages with which distinctly different processes are associated.—C.J.W.

Sizing

Improving the Sizing of Paper. Levis M. Booth. U. S. pat. 1,713,642, May 21, 1929.—Aluminum sulphate and sodium carbonate or other suitable substances which react to form a metallic hydroxide are added to paper stock after addition of size and size-precipitating reagents to the stock and at or before delivery to the paper machine, in order to improve and facilitate the sizing.—A.P.-C.

Method of Sizing Paper. Hugh M. Spencer. U. S. pat. 1,714,052, May 21, 1929.—Coagulation of a rosin emulsion is effected by admixture of a peptized colloidal solution of aluminum hydroxide.—A.P.-C.

Cellulose and Lignin

Effect of Chemical Agents, Especially of Oxidizing Influence, on the Behavior of Cellulose. P. Waentig. Cellulosechmie 10, 81-85 (1929). Purified cellulose is characterized by a fibrous structure, which is distinguished by a regular arrangement of anistrophic micelles or crystallites and which possess comparatively great resistance to swelling. Swellable regenerated cellulose is characterized by disorientation, possibly also by amorphorization, of the micelle (which explains its increased swelling capacity) and alkali-soluble (chemically modified) cellulose corresponds with a reduction in size of the crystallite or micelle through intramicellar decomposition. In the formation of hydrocellulose and oxycellulose not only disorientation, or amorphorization, of the crystallic occurs but also intramicellar or intramolecular decomposition. The cellulose fiber is partly physically and partly chemically decomposed, but to a greater extent physically than chemically. The decreased vicosity of viscous solutions during ripening and the increased alkali-solubility of the regenerated viscose are explained in this way, since ripening is accompanied by absorption of air from the air—hence by oxidation. The accelerated ripening of viscose in the presence of metals is due to the fact that the latter act as oxygen carriers. That sodium hydroxide has no such effect in reducing the size of the cellulose micelles is shown by the effects of mercerisation in not reducing the strength of alpha-cellulose content of the material. Cuprammonium acts in the same way as concentrated sodium hydroxide; the more rapid oxidation and fall of viscosity of the cellulose on keeping are promoted by the catalytic action of the copper. Differences between the viscosities of xanthate solutions prepared from cotton linters and cellulose wadding, respectively (which have been explained by the assumption that the former has a higher "micelle molecular weight" than the latter), depend on the previous history of the materials, since not only the oxy-or hydrocellulose content of the material, but also the specific natural compound of the cellulose, must be considered. The effects on the viscosity of the viscose or cellulose nitrate solutions of cutting up the original material into small particles and valency changes in the cellulose complex due to oxidation, are discussed.—C.J.W.

Changes in Moist Sulphite Cellulose on Storing. E. Hochberger, Papierfabr, 27, 282-284 (1929). A method is described by which the isoelectric point of pulp may be determined. The isoelectric point of machine dried, bleached pulp is changed slightly to the alkaline side by storage of the material for two months but similar storage of moist pulp, bleached or unbleached, results in a marked change to the acid side. Moist pulp stored for this time absorbs considerably more 18% sodium hydroxide solution per unit weight under standard conditions of treatment than does fresh material in the air-dry state and also develops greater acidity, as shown by determination of its hydrogen ion concentration by use of suitable indicators.—C.J.W.

Measurement of the Viscosity of Cellulose. A. Küng and E. Seger. Papierfabr. 27, 433-436 (1929).—A comparatively rapid method of measurement of the viscosity of cellulose after its conversion into xanthate, by the viscose method, but without ageing or ripening is described. The cellulose, put up into 1 mm² pieces, is mixed thoroughly and sufficient is weighed out to give 0.9 gram of the dry materal. This is steeped in 10 cc. of 17.5 percent sodium hydroxide solution at 20° for 2 hours, squeezed out to a weight of exactly 3 grams and treated with carbon disulphide vapor in a special bottle. The latter has a hollow stopper in which the necessary amount of carbon bisulphide is placed and vapor from the solvent escapes into the interior of the bottle through a small hole and there converts the alkali cellulose into xanthate, which is subsequently dissolved

out by sodium hydroxide solution. The viscosity of the viscose solution, thus obtained, is measured in an Ostwald viscosimeter and the whole procedure can be completed in 9.5 to 10 hours, as against the several days necessary for the ordinary viscose conversion method.—C. J. W.

Lignin and Cellulose. X. Aromatic Nature of Lignin. —K. Freudenberg, W. Belz and C. Niemann. Ber. Deut. Chem. Ges. 62, 1554-1561 (1929).—For abstract of this purely chemical paper see British Chemical Abstracts 1929 A:915.—C. J. W.

Lignin and Cellulose. XI. Lignin. K. Freudenberg, H. Zocher and W. Dürr. Ber. Deut. Chem. Ges. 62, 1814-1823 (1929) —Lignin is prepared by successive treatment of pine wood with alcholic benzene and cold 5% sodium hydroxide. Pentosans of hemicelluloses are removed by 1% sulphuric acid and the residue is treated with Schweizer's solution. The product has a pale yellowish-brown color and contains 16% methoxyl and 1.1—1.4 per cent of formaldehyde. After treatment with syrupy phosphoric acid and hydrochloric acid (d. 1.19) the methoxyl content has increased to 17%. Treatment with alkali increases the resistance of lignin to attack by calcium hydrogen sulphite and the effect is enhanced by the following boiling with dilute acid. There does not appear to be any chemical difference between lignin from spring and autumn wood although the morphological distinction is very marked. Histological investigation suggests that the lignin permeates the membrane like a network which remains intact after removal of nearly three-fourths of the tissue substance. The surface is very markedly developed. Methylene blue is adsorbed in large amounts and water and alcohols are tenaciously retained. The behavior towards henzyl alcohol and aniline indicates the saturation of a network which resists extension. Lignin appears to be wetted by all types of liquid and to retain its form when dried. Treatment of lignin, obtained from wood by alcoholic benzene followed by hydrochloric acid and phosphoric acid, with ptoluenesufonyl chloride followed by hydrazine indicates the presence of 5-6 secondary alcoholic hydrozyl groups and 1 phenolic hyspersed, the action of ptoluenesulfonyl chloride remains unchanged, but sulphinic acid is not produced by hydrazine, so that phenolic hydroxyl groups do not appear to be present. Possible structures of the lignin molecule are discussed in detail.—C. J. W.

Lignin. II. R. O. Herzog and Hillmer. Ber. Deut. Chem. Ges. 62, 1600-1602 (1929).—It is assumed that atmospheric oxygen plays an essential part in the union of the lignin components in nature. Cautious treatment of rye straw at the ordinary temperature with 2% methyl alcoholic sodium hydroxide in the absence of light and air yields, after electrodialysis, a lignin soluble in alkali and (colloidally) in water. The molecular weight in resorcinol indicates the presence of about two coniferyl residues. Its absorption spectrum in the ultraviolet is similar to those of other types of lignin. It is not reduced by hydrogen in the presence of platinum black.—C.J.W.

Genuine Lignin. III. Action of Diazomethane on Pine Wood. W. Fuchs and O. Horn. Ber. Deut. Chem. Ges 62, 1691-1693 (1929). Treatment of pine wood with diazomethane ultimately yields a product containing about 16% of methoxyl, from which a lignin with 19.7% of methoxyl can be isolated. Since the original lignin, isolated by treatment with hydrochloric acid, contains 15.4% of methoxyl, it follows that one hydroxyl group susceptible to diazomethane is present in a molecule of molecular weight about 800. The methylated lignin exhibits double refraction. Willstatter's lignin resembles lignin in wood, since it gives a methylated product with 20.8% methoxyl. Cotton wool and filter paper are methylated with greater difficulty than the cellulose in wood by ethereal diazomethane; under similar conditions dextrose is unaffected.—C. J. W.

Thermal Decomposition of the Wood Pulp from Deciduous Trees. K. Korotkov. Weissruss. staatl. Landwirtschaftsakademie, 1927, 3 p. C. A. 23, 5039. The lignin is obtained from wood pulp by separate treatments with one per cent hydrochloric acid or 72% sulphuric acid. The former method gave higher yields of lignin. By dry distillation in a glass lined retort at 360°, yields of methyl alcohol as high as 50-65 percent were obtained. In addition to about 0.5% of acetic acid, 100% increased yield of charcoal was obtained over what would normally be expected from the original wood. More methyl alcohol was secured from lignin prepared by decomposition with hydrochloric acid rather than by sulphuric acid.—C. J. W.

Determination of Alpha- and Beta-Cellulose. Ragnar Bergqvist. Pulp Paper Mag. Can. 28, 515-526, 548, 550 (Oct. 3 1929). —From a critical study of the Jentgen method for determining alpha-, beta- and gamma-cellulose compared with a parallel determination of a control sample of known composition, the author concludes that with certain precautions the Jentgen method gives results which do not need the usual corrections. He suggests the following precautions: The analysis should be conducted in a thermostate at 20°C. or a correction of 0.1% to the alpha-cellulose value should be added for each degree under 20° C. and substracted for each degree above 20°C.; an equal but reverse correction should be applied to the bet-cellulose value; the temperature of the wash water should be kept at 20C. Warming and filtering must be done as rapidly as possible after dilution, and a Büchner funnel is recommended. Dilution with water between the mercerizing and filtering should always be done with the constant quantity 300 cc. Grinding of material should be done with light blows and five minutes' pounding should suffice. Careful work along the above line should give an alpha-cellulose content value with an error not greater than 1%.—A.P.-C.

Alkaline Process

"Albenielsen" System of Indirect Cooking With Circulation and Simultaneous Concentration of the Cooking Liquor. Jac. W. Bruun. Ptapir-Journalen 17, 104-8; 129-32; 134-7; 146-51 (1929). An external heating device is described which allows concentration of the cooking liquor simultaneous with circulation. Comparative tests on cooking sulphate pulps by the Morterud and Albenielsen methods have shown a reduction to 742 Kg. from 2384 Kg. in net steam consumption on a digester yielding 1500-1600 Kg. pulp, while the density of the black liquor was increased to 24° Bé from 16é Be, with the combustible matter amounting to 36.4% as compared to 25.1%. Physical and chemical tests on the pulps produced by the new method show considerable superiority. No difficulties have been encountered because of incrustation on evaporator tubes.—C.E.P.

Sclerenchyma in Straw Cellulose. Korn, Papierfabr. 27, 311,-314 (1929); Wochbl. Papierfabr. 60, 614-617 (1929). In an attempt to find whether the cellulose or the paper manufacturer is responsible for the appearance of sclerenchyma particles in paper, experiments were carried out on samples of straw cellulose made by different processes at 12 different works. The particles were collected under standard conditions, identified under the microscope and counted. Out of all the samples, which had been prepared under the ordinary conditions of commercial manufacture, only one showed absence of the sclerenchyma. The remainder showed numbers ranging from 9 to 93 particles per sq. meter of test paper; the greater number, the greater, in general, was their size. Of the test samples, two were of high content, five of medium and four of small. The presence of large or small amounts cannot be correlated with any particular process of preparation of the cellulose. Cleaning the mincers and the manner of preparation of the cooked straw must be of importance.—C.J.W.

Chemistry of Sulphur in the Sulphate Recovery System. M. Dorenfeldt Holtan and E. Holtan. Papir-Journalen 17, 70-3 (1929). Paper Trade J. 89, No. 10; 59-60 (Sept. 7, 1929). By determination of the ratio S : Na in black liquors, black ash, smelt and sublimed materials throughout the sulphate recov-

ery system the authors found that the overall loss of S amounted to 39% of the total S, distributed as follows: smelter 31.5%, rotary 24.75%, while the disc evaporators recovered 17.25%. Of the 39% loss, 9.5% was found in the form of volatilized Na_2SO_4, the balance presumably lost as SO_2 or H_2S.—C.E.P.

Treatment of Pulp. Roger C. Smith. U. S. pat. 1,715,310, May 28, 1929. After digestion and before beating, pulp is treated with an aqueous solution of a sulphate and an acid, such as sodium sulphate and sulphric acid, in order to remove undesirable organic substances.—A.P.-C.

Cellulose from Plant Materials. Horace Walker. U. S. pat. 1,709,824, April 16, 1929. Material such as the stems, roots or tops of potato plants or other plants of the family Solanaceae are subjected to heating with steam at 45°C. for a predetermined period (suitably about 12 hours), then exposed to the atmosphere and bleached and digested (suitably for 12 hrs. more at 45°C.) and finally treated to separate the cellulose from the mass, as by beating.—A.P.-C.

Treating Oil-Soaked Hemp Waste. Channing C. Beeth. U. S. pat. 1,710,914, April 30, 1929. The waste is soaked in a solution of caustic soda and live steam is passed through the material to cook it, the liquid is removed, and the product is pressed into sheets such as fiber board.—A.P.-C.

Softening Wood, Straw, Grass or Other Vegetable Fibers. Sidney D. Wells, assignor to Paper Mill Laboratories, Inc. U. S. pat. 1,714,459, May 21, 1929. Softening is effected by spent liquors from pulp-cooking processes using caustic soda "free from more powerful chemicals" and containing sodium carbonate, and the material may be used without further refining and in the presence of sulphur.—A.P.-C.

Production of Cellulose. Otto C. Strecker. Fr. pat. 655,483, Jan. 12, 1927. Practically pure cellulose, in high yield is obtained from the materials such as red pine wood, beech wood, bamboo, straw, and Scotch fir or other resinous woods, by use of boiling solutions containing hydroxy compounds of the isocyclic series in which at least one hydrogen atom of the hydroxyl group has been replaced by a metal, preferably of the alkali, alkaline earth or magnesium group. Metal derivatives of phenol, cresol, naphthol and their hydrogenated derivatives or substitution products containing halogens or nitro groups may be used, and these substances are preferably used in the form of permanent emulsions which may be stabilized by additions such as castor oil soaps, cyclohexanol and salts of humic acid. Penetration of the vegetable fibers is promoted by addition of various salts such as trisodium phosphate or various other substances and catalysts also may be used, of which barium peroxide is given as an example. The boiling may be effected under pressure to expedite the operation and attack on the cellulose fibers, themselves, may be checked by addition of substances such as sodium sulphite, sodium formate, sodium malate, sodium phenylsulphonate or their homologs or substitution products, stannous oxide, or the like. Metal compounds may be added during the process to replace the metal cation entering into the lye by chemical reaction with acids formed from the vegetable fibers.—A.P.-C.

Production of Lignin-Free Cellulose. I. G. Farbenindustrie A.-G. Fr. pat. 648,706, Feb. 15, 1928. Cellulose free from lignin is obtained by treating cellulose material suitably divided with the exact amount of a solution of an alkaline-earth hypochlorite, containing 2% available chlorine, necessary to produce complete oxidation of the lignin, the process being carried out at a temperature not above 45°C. without external heating.—A.P.-C.

Process of Producing Paper Pulp. Robert A. Marr. U. S. pats. 1,717,794, to 1,717,800, June 18, 1929.—*No. 1,717,794*—Cellulosic material such as white birch chips is cooked under pressure and at near the boiling point of the solution used at the pressure employed with a solution containing as its principal dissolved component a sulphate such as sodium sulphate and which is free from substantial quantities of sulphide, sulphite and hydroxide, until the interstitial matter is rendered readily crushed and the material is then reduced to a pulp. *No. 1,717,795* specifies a similar process in which a solution containing 0.05 to 0.02% of sulphate such as sodium and magnesium vulphates as used. No. *1,717,796* specifies the use of a cooking solution containing sulphate of magnesium and potassium together with a chloride such as magnesium chloride. *No. 1,717,797* specifies rendering the interstitial matter readily friable by cooking in a 1 to 5% solution of salt such as sodidum chloride and a sulphate, and then pulping by mechanical treatment. *No. 1,717,798* specifies boiling in a dilute aqueous solution of a nitrate such as sodium nitrate and then soaking in water and pulping mechanically. *No. 1,717,799* relates to sheets formed of cellulosis fibers and associated plant material such as are produced by similar processes. *No. 1,717,800* specifies digesting cane material in a solution of alkali metal sulphate and zinc sulphate to obtain a product which may be used for making brushes, burlap, cordage, etc.—A.P.-C.

Process for Pulping Straw, Esparto, Grass or the Like. E. V. Hayes-Gratze. Eng. pat. 311,945. The material is boiled for 6 to 8 hours at atmospheric pressure with excess water and about 30% of lime. The cooking may be preceded or followed by milling or grinding the material to a flour-like consistency. As a preliminary the raw material may be exposed in a moist or wet condition to a temperature of 30°C. for from 3 to 6 days, with or without a small proportion of alkali, to assist the development of bacillus butyricus and the elimination of the pectin impurities.—A.P.-C.

Process for Pulping Straw, Esparto, Reeds, Etc. E. L. Rinman. U. S. pat. 1,716,006, June 4, 1929. Material such as the straw of rye, wheat, barley or oats, reeds, Indian corn straw, rice straw, esparto, sugar cane, sunflower stalks, cotton plants or papyrus, is boiled at 100° to 140° C. with caustic soda solution with or without addition of sodium sulphide. At this temperature glutinous substances are not destroyed. Various subsequent treatments are also described which may include washing, grinding and bleaching if desired.—A.P.-C.

Sizing

Sizing Process. E. Lecoq. Eng. pat. 313,171. In a process for sizing paper, yielding a cheaper and better product than usual and one more suitable for fixing dyes, etc., the agglutinant such as an alkaline resinate is used with the sulphate of an alkaline metal to which may be added other mineral or vegetable substances particularly aluminum sulphate. In an example, 40 g. of alkali resinate dissolved in hot water are poured into a beater containing 200 kg. of paper pulp. After about half an hour a solution of 200 g. of sodium bisulphate is added and after a further quarter of an hour a solution of 180 g. of aluminum sulphate. The two sulphate solutions may be mixed and added together. Any acidity of the pulp may be wholly or partly neutralized by means of a base or by calcium carbonate and the charge completed by the addition of an inert substance such as kaolin. In making paper from old sized papers the aluminum sulphate may be omitted.—A.P.-C.

pH Control in the Paper Mill. A. B. Hansen, Marinette & Menominee Paper Co. Paper Mill 52, No. 40, 3, 6 (Oct. 5,1929). A definite ratio between size and alum should not be followed for different papers. The best pH value for sizing may not be the same for different mills. It should be determined for each mill. It will probably lie between 4.0 and 6.5. Decreasing the pH value or increasing the hydrogen-ion concentration increases the rate of deterioration of paper. In general, beating takes place more rapidly at higher pH values than at lower values. Decreasing pH values increases the corrosiveness of stock and white paper on paper mill equipment. A "standard" pH value for each grade of paper should be set at each mill and followed closely.—A.P.-C.

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The High Cost of Carelessness*

By Albert N. Wold[1]

Last year it was my privilege to address you upon the subject of the "High Cost of Accidents." This year, in the talk I am to give you today, I want to amplify that subject and discuss the "High Cost of Carelessness." This is a broadening of the field under discussion by the inclusion of the cost to the individual workman and to the industry of carelessness insofar as health is concerned.

So that you may be refreshed as to the subject matter of my talk last year and so that the subject of accidents and sickness in industry may be co-related, I shall, if I may, review briefly the points I brought out last year.

Incidental and Uninsurable Costs

It was pointed out that the cost of an accident to the employer is estimated at four times the amount paid the injured workman in compensation, medical and hospital expenses. One of the outstanding insurance companies has listed these incidental and uninsurable costs as follows:

(1) Time lost from production by employee as a result of injury.
(2) Time lost from production by other employees who stop work.
  (a) Out of curiosity. (b) Out of sympathy.
  (c) To assist injured. (d) Because of nervous shock.
(3) Temporary slowing down of production in department—because
  (a) Employees gather in groups to talk about the accident,
  (b) Thoughts of the accident continue to divert their attention from their work.
(4) Time lost from production by foremen, supervisors or other executives—to
  (a) Aid injured employee (b) Investigate cause of accident.
  (c) Arrange for injured employee's production to be continued by some other employee.
  (d) Select, train, or break in new employee to replace injured.
  (e) Prepare accident reports for employer, insurance carrier, and State.
  (f) Attend hearings before State Industrial Accident Commission.
(5) Time of first-aid attendant and hospital department staff.
(6) Spoilage and waste of material caused by accidents.
(7) Damage to machines, tools, building or other property.
(8) Losses due to interference of accident with production, such as failure to fill orders on time.
(9) Loss of profit on productivity of employees affected by the accident.
(10) Loss in putting injured employee back on pay-roll and paying full wages when injured is not fully recovered and is unable to earn the wages paid.
(11) Loss through inferior productive effort due to inability (where high accident rates prevail) to attract and hold high grade workers. Inferior workers waste more and cause more accidents.

The foregoing list, gentlemen, is not mine. It has been worked out by, as I say, an outstanding insurance company after a thorough examination of some 550,000 accidents of all kinds and descriptions.

Loss From Accidents Which Do Not Result in Injuries

It should be noted, too, that the foregoing list refers to the accidents which result in injury. There is a loss to the employer growing out of accidents which do not result in injuries. These have been classified as follows:

(1) Loss of time of workers, foremen, superintendents, plant engineers and others in making repairs, getting things going again, doing a job over, etc.
(2) — Damage to machinery and equipment, etc.
(3) — Waste of materials and supplies.
(4) Interference with production schedules, delays, waiting for new machines, finance or breakdown, etc., etc., and increase hazards from rushing the work afterwards.

This same outstanding insurance company, in analyzing the 550,000 accidents referred to, came to some very definite conclusions as to the cause of the 50,000 injuries growing out of the 500,000 accidents. They discovered that for every major injury there were twenty-nine minor injuries and three hundred accidents which did not result in injuries. Of course, every one of the three hundred, no injury accidents might have been a minor injury accident or, might have been a major injury. The real causes of accidents were listed as follows:

(1)	Faulty instruction	30 per cent
(2)	Inattention	22 per cent
(3)	Unsafe practice	14 per cent
(4)	Poor discipline	12 per cent
(5)	Inability of employee	8 per cent
(6)	Physical unfitness	3 per cent
(7)	Mental unfitness	1 per cent
(8)	Mechanical hazards	10 per cent

Mills Fairly Well Guarded

This indicates that the mechanical hazards in industry approximate 10 per cent of the real causes of accidents. In other words, our mills have been fairly well guarded. Ninety per cent of the causes of accidents can be attributed in a greater or less degree to the carelessness of the employee or the carelessness of the employer. The obvious conclusion to be drawn then is that the High Cost of Accidents is due in a large measure to the carelessness of the employer and his employees. To eliminate this carelessness,

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educational programs of one kind or another are necessary. It must not be forgotten that this educational program should work two ways. Both the employer and the employee stand in need of education.

Insofar as the employer is concerned, it is essential that he must give serious attention to the causes of accidents. He must believe in accident prevention and must practice it. Insofar as the employee is concerned, he must be reached through the key man in the industry and that man is the foreman. If the foreman is not sold on accident prevention, it is quite certain that all the employees under his supervision will be a careless group of employees.

We discussed educational ways and means to some extent this morning. In the Backus-Brooks mills we are using several methods, but one of the most effective is the bulletin board system. The daily change of photographs attracts the employee to the bulletin board day by day, and it is our experience that a very large percentage of them take enough time to look at the accident prevention posters which are placed on either side of the ever-changing photographs. As a sample of some of the educational matter which we, ourselves, get out and post on the bulletin board, I wish to show you the blue print—the figures on this blue print give the comparative accident records for the last two years. It is noted that our accident frequency rate has been reduced from 66 lost time accidents per one million hours worked to 51. These are the figures for the years 1928 and 1929. The figures for the year 1930 will take this into the lower 40's. Another interesting observation is that in 1928, the number of days lost per man was 3.25, while in 1929 it was 1.41. This really means that the mills would have been shut down that number of days if all the injuries had occured at the same time. In this day of high costs and small returns, it is worth reflecting upon that even one day of mill productions lost runs into a great deal of money.

Some Interesting Figures

This brings me to some interesting figures which have been developed by the Newsprint Service Bureau. The figures which I am about to give indicate in a very comprehensive way the fact that our time margin for profit-making is, as a matter of fact, not very large. Operating full time, these figures indicate that the Newsprint Mills are obliged to operate for eleven months before they can begin to show a profit. If the mills operate uneconomically or for a shorter time than that, as they are now doing, the profits are very rapidly dissipated or are rapidly disappearing. These interesting figures are as follows:

For one year	Running full speed for
To pay for labor	81 days
To pay for wood	62 days
To pay for steam and power	40 days
To pay for depreciation, obsolescence, insurance and taxes, interest on bonds, etc.	34 days
To pay for administrative, selling and shipping expenses	31 days
To pay for miscellaneous materials	15 days
To pay for machine clothing	10 days
To pay for material for repairs to machinery and equipment	6 days
To make profits	31 days
Total working days	310 days
Shut down for Sundays and holidays	55 days
Total for year	365 days

The cost of accidents and the cost of sickness in industry comes under the item of 34 days listed to pay for depreciation, obsolescence, insurance and taxes, interest on bonds, etc. If your mill suffers one, one and a half or two days of lost time per man on account of accidents, then it is an easy matter for you to estimate the cost to your mill of these accidents and the sickness in your group of employees.

The mills which are operating upon a full schedule today are very rare—they are few and far between. Therefore, it becomes increasingly important that the mills be operated economically in order to make up for the shortened production periods. One or two days of mill production saved by the reduction of accidents or the elimination of sickness, certainly will go a long way towards paying a part of the dividend which all owners of newsprint mills hope to pay.

Percentage Cost of Labor

It has been estimated that the percentage cost of labor to the product value is 14½ per cent. The average annual wage for the entire United States has been estimated at $1,300.00. The average output per man accordingly is approximately $9,000.00. The Canadian or Ontario variants from these figures can be but very slight. In other words, if a man earning $1,300.00 in wages per year, with a productive value of $9,000.00, is rendered unfit for work either through accident or through sickness and if, for example, a newsprint mill employing 500 wage earners loses two full days throughout the year for each man on the pay-roll, we arrive at the interesting figure of $4,500,000.00 of productive value lost for one year or approximately $15,000.00 per day. The value of the lost production in this case would thus be $30,000.00 for the two days lost. I do not pretend to assume that these figures are exact, but they indicate at least the high cost of accidents and sickness in industry.

We were discussing this morning the accident prone employee. Every mill has the problem of the employee who is constantly being injured. Contrasted to this employee is the other employee who is never injured. Psychologists have found that accidents do not distribute themselves by chance, but that they happen frequently to some men and infrequently to others, as the logical result of a combination of circumstances. It is well known that there are certain indivduals who, because of their mental, psychological or physical defects, fail to control a situation leading to an accident when it arises, and almost invaribaly become involved in the accident. On the other hand, there are individuals who possess the necessary physical and mental requirements, enabling them to control a situation out of which an accident arises, and consequently manage to avoid the accident. They show little susceptibility to accident hazards. Bearing upon this subject, the Metropolitan Life Insurance Company has made a very interesting study of the Cleveland Street Railway system. They learn that 30 per cent of the men involved in accidents were accident prone, in that they were involved in 44 per cent of the accidents. Furthermore, they found that 27 per cent of the accidents occurred at the beginning or at the end of the day.

The Repeater

The accident prone employee is more often referred to as the "repeater." An examination of the primary causes of accident proneness by the insurance company referred to indicated the following causes:

(1)	Faulty attitude to their work	14 per cent
(2)	Failure to recognize potential hazards	12 per cent
(3)	Faulty judgment of speed and distance	12 per cent
(4)	Impulsiveness	10 per cent
(5)	Irresponsibility	8 per cent
(6)	Lack of attention	8 per cent
(7)	Nervousness and fear	6 per cent
(8)	Defective vision	4 per cent
(9)	Organic diseases	4 per cent
(10)	Slow reaction	4 per cent
(11)	High blood pressure	2 per cent
(12)	Senility	2 per cent
(13)	Worry and depression	2 per cent
(14)	Fatigability	2 per cent
(15)	Improper distribution of attention	2 per cent
(16)	Inexperience	2 per cent
(17)	Miscellaneous	6 per cent
Total		100 per cent

It is perhaps not too far fetched to say that we all are more or less sick at all times. Eliminate sickness and you will, to a large extent, eliminate accidents. The Fatigue Research Board of Great Britain declares that an accident from the psychological point of view is merely a failure to act correctly in a given situation. In other words, if a man confronted with a situation, out of which an accident may grow, can co-ordinate his senses properly, it is likely that he will not become involved in an accident; but if that man for one reason or another should be defective on account of sickness, his co-ordination is absent and the probability is that he will become an accident victim. The Fatigue

Research Board of Great Britain calls this inability to co-ordinate by the imposing name of Temperamental instability. The Board states that this is a term that includes all factors inherited or acquired that effect an individual's nervous and emotional reaction to his environment. The conclusion would be that a man who is in good health, enjoys a stable temperament and is unlikely to become involved in an accident. The reverse is true of the man who suffers ill health and for that reason is not, as I might say, properly "tuned in" to his job.

From the United States census figures, we learn that the lost time of industrial workers in the United States, due to sickness amounts to one million years, or, in other words, one million workers laid up for one entire year. Using the average wage, I have used heretofore, that is, $1,300.00 a year, this amounts to a lost wage of $1,300,000,000.00 and a lost productivity value of $9,000,000,000.00.

Cost of Sickness in Industry

I do not pretend to be a psychologist and, for that reason, do not want to go any deeper into the psychological factors behind accidents and behind sickness in industry. Two outstanding industrial concerns in the United States—one a rolling mill and the other a silk manufacturer, have made a very careful investigation of the cost of sickness in industry as it effects them. The figures may be interesting. The rolling mill figures are as follows:

Total plant man hours	11,347,762
Sickness cases reported	2,169
Days lost on account of sickness	19,713
Sickness frequency rate (per 1,000,000 man hours)	191.139
Accident frequency rate	9.43
Sickness severity rate (per 1,000 man hours)	1.737
Accident severity rate	2.552

This would indicate that for every lost time accident, there were approximately 32 sick cases reported. On the other hand, the severity rate, chargeable to sickness, was approximately 20 per cent less than the severity rate charged to accidents. It is impossible to estimate from the figures given, the number of accidents growing out of sick cases, but I am certain that a large proportion of the accidents reported, would not have happened, had not the individuals involved been sick to a larger or smaller degree.

In the case of the second industry referred to, the silk thread manufacturer, some interesting figures are given as to the actual cost in dollars and cents of sickness in industry. The loss to the company is given as follows:

Cost of idleness, due to replacing old employees with new ones, because of transfers and lay-offs on account of sickness	$67,500.00
Cost of idle machinery, due to absence for sickness	150,000.00
Cost of production loss incidental to lowered vitality of those remaining at work while ill	50,000.00
Total	$267,500.00

The loss to the employees and to the community was listed as follows:

Direct loss of wages during disability	$162,000.00
Indirect loss through reduction of earning capacity after illness	40,000.00
Medical, dietary, surgical and nursing expense	45,000.00
Public expenses and charitable relief	56,000.00
Total	$303,000.00

In other words, the total cost to the employee himself and to the community is greater than the cost to the employer. You will note that the total cost to the company and to the employees and community was $570,500.00—this covered 4,500 workers. A cost to the company of approximately $60.00 per worker on account of sickness and approximately $70.00 to each workman and to the community of each workman.

The figures I have quoted may not be representative of industry as a whole, but as I stated a few moments ago, they are at least indicative of the high costs which grow out of sickness in industry.

The Efficient Mill Is the Safe Mill

It is a well known fact that the efficient mill is the safe mill. The economically operated mill is the mill which runs along with very few accidents and very few cases of sickness. It is my belief that the accident and sickness factors are of vital importance in these days when all mills are obliged to cut corners in order to keep going. The problem of accident prevention and sickness prevention is one which should hold the attention of everybody concerned, from the highest officer in the organization down to the lowest employee. The working spirit of the employee is important to the industry. If the man is dispirited for one reason or another, he is naturally a poor employe and prone to accidents and to sickness. It may well be that it would pay every newsprint mill to employ visiting nurses to call upon the families of the employees. As a matter of fact, our educational program should reach into the family home of each employee, if it is going to have a lasting effect. Accident prevention and sickness prevention is a practical problem. I have endeavored to point out that the losses to industry, as well as to the employee in the community are, as a matter of fact, staggering. I am sure that as we give attention to the accident prevention and sickness prevention problems, we all become more or less imbued with the idea that we are performing a duty which rests upon our shoulders.

I think this thought has been best expressed by Rev. John McDowell of Pittsburgh, Pa., a one-armed former coal miner. Recently he said:

"To save life is the noblest of all purposes. It embodies the highest ideal of humanity. It conserves the best assets of the nation; provides its best protection; and creates its real glory. It incarnates the spirit of democracy and brotherhood."

Dayton Rubber Mfg. Co. Upheld by U. S. Court

DAYTON, Ohio, August 4, 1930.—Contention of the Dayton Rubber Manufacturing Company that its V-belt of rubber and fabric, which is widely used on many types of mechanical drives, was a new structure and that the basic patent covering the device was valid was upheld recently by the United States Court at Columbus, Ohio.

The decision of the court brought to an end a suit which had been directed by the Dayton concern against a distributor of infringing belts and also the manufacturer. Counsel for the plaintiff company were H. A. Toulmin and H. A. Toulmin, Jr., Dayton patent attorneys.

National sales and distributor organizations are maintained by the Dayton manufacturer for the merchandising of both automotive and industrial V-shaped rubber belts. The product is used as original equipment on more than 85 per cent of all makes of automobiles, on domestic refrigeration machines of various makes, on washing machines, on pumps and on other nationally used products. It also is found extensively in practically every branch of industry, on drives ranging from a fraction of a horsepower to several hundred horsepower.

Reforestation Under Hewitt Law

ALBANY, N. Y., August 4, 1930.—Under the program of acquisition of abandoned farm lands outside of the forest preserve counties advocated under the Hewitt laws of 1929 it was announced this week that the Conservation Department up to July 10 had purchased clear title to 17,653 acres in numerous areas. Spring plantings on these lands has amounted to a total of 3,583,090 trees at an average cost of $6.32 per thousand. In addition the planted areas are now being protected by fire lines running through or along the areas in question.

Under the extensive program payments for lands are made upon the approval of title by the Land and Title Bureau of the Department of Law. The Conservation Department plans to reforest this fall all of the lands to which title may be approved. Two of these reforestation areas are located in Broome County and one each in Cattaraugus, Chautaque, Montgomery, Oswego and Schoharie; five each in Chenango and Otsego; three in Cortland and two in Madison. Additional areas are being acquired as rapidly as tracts larger than the statutory 500 acre minimum are offered.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING AUGUST 9, 1930

SUMMARY

Cigarette paper .....124 cs.
Wall paper .....6 bls., 23 cs.
Paper hangings .....18 bls., 22 cs.
News print .....3207 rolls
Printing paper .....170 cs.
Wrapping paper .....16 bls., 222 cs.
Drawing paper .....47 cs.
Filter paper .....9 cs.
Decalcomania paper .....5 cs.
Transparent greaseproof paper .....12 cs.
Colored paper .....37 cs.
Surface coated paper .....18 cs.
Metal coated paper .....49 cs.
Writing paper .....3 cs.
Tissue paper .....12 bls, 1 cs.
Cover paper .....7 cs.
Caoutchouc paper .....6 cs.
Gallic paper .....1 cs.
Painted paper .....3 cs.
Condenser paper .....2 cs.
Miscellaneous paper ..931 rolls, 426 bls., 49 cs.

CIGARETTE PAPER

P. J. Schweitzer, Pr. Johnson, Marseilles, 124 cs.

WALL PAPER

J. E. Bernard & Co., Berengaria, Southampton, 2 cs.
Guaranty Trust Co., Deutschland, Hamburg, 12 cs.
F. J. Emmerich, Deutschland, Hamburg, 3 cs.
Phoenix Shipping Co., Deutschland, Hamburg, 1 ble.
Globe Shipping Co., Milwaukee, Hamburg, 4 cs.
G. J. Hunken, Yorck, Bremen, 3 bls.
C. Grimmer & Son, Majestic, Southampton, 1 cs.
Hudson F'd'g Co., Mauretania, Southampton, 1 cs.
C. Grimmer & Son, Mauretania, Southampton, 2 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., American Banker, London, 12 bls., 20 cs.
W. H. S. Lloyd & Co., Majestic, Southampton, 5 bls., 2 cs.
J. E. Bernard & Co., Arabic, Liverpool, 1 ble.

NEWS PRINT

Perkins, Goodwin & Co., Deutschland, Hamburg, 159 rolls.
Perkins, Goodwin & Co., Milwaukee, Hamburg, 498 rolls.
——, Milwaukee, Hamburg, 164 rolls.
W. H. Bell, Markland, Liverpool, N. S., 3871 rolls.
Stora Kopperberg Corp., Gripsholm, Gothenburg, 497 rolls.
Johanson, Wales & Sparre, Inc., Gripsholm, Gothenburg, 18 rolls.

PRINTING PAPER

E. Dietzgen & Co., Milwaukee, Hamburg, 8 cs.
E. Dietzgen & Co., N. Amsterdam, Rotterdam, 72 cs.
C. Steiner, N. Amsterdam, Rotterdam, 31 cs.
T. N. Fairbanks, Majestic, Southampton, 1 cs.
Japan Paper Co., Majestic, Southampton, 4 cs.
T. N. Fairbanks, Conte Grande, Genoa, 44 cs.
Keuffel & Esser Co., Pr. Roosevelt, Hamburg, 10 cs.

WRAPPING PAPER

Sylvania Industrial Corp., Lapland, Antwerp, 100 cs.
T. Barret & Son, Gripsholm, Gothenburg, 16 bls.
Wilkinson Bros. & Co., Inc., Gripsholm, Gothenburg, 122 cs.

DRAWING PAPER

J. Henschel & Co., Deutschland, Hamburg, 1 cs.
H. Reeve Angel & Co., Inc., Tuscania, London, 3 cs.
Keuffel & Esser Co., Tuscania, London, 2 cs.
Keuffel & Esser Co., Pr. Roosevelt, Hamburg, 41 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Tuscania, London, 9 cs.

DECALCOMANIA PAPER

C. W. Sellers, Deutschland, Hamburg, 3 cs.
Phoenix Shipping Co., Deutschland, Hamburg, 2 cs.

TRANSPARENT GREASEPROOF PAPER

Haule Wax Paper Mfg. Co., Deutschland, Hamburg, 12 cs.

COLORED PAPER

S. Gilbert, Yorck, Bremen, 14 cs.
S. Gilbert, Columbus, Bremen, 13 cs.
——, Pr. Roosevelt, Hamburg, 10 cs.

SURFACE COATED PAPER

Phoenix Shipping Co., Deutschland, Hamburg, 1 cs.
Gevaert Co. of America, Lapland, Antwerp, 17 cs.

METAL COATED PAPER

Hensel, Bruckman & Lorbacher, Deutschland, Hamburg, 11 cs.
Hensel, Bruckman & Lorbacher, Yorck, Bremen, 4 cs.
W. A. Foster & Co., Majestic, Southampton, 3 cs.
N. Gal, Columbus, Bremen, 31 cs.

WRITING PAPER

Thomas & Pierson, Majestic, Southampton, 1 cs.
Japan Paper Co., Mauretania, Southampton, 1 cs.
H. Reeve Angel & Co., Inc., Tuscania, London, 1 cs.

TISSUE PAPER

Globe Shipping Co., N. Amsterdam, Rotterdam, 12 bls., 1 cs.

COVER PAPER

International F'd'g Co., Deutschland, Hamburg, 7 cs.

CAOUTCHOUC PAPER

American Express Co., Deutschland, Hamburg, 6 cs.

GALLIC PAPER

Keuffel & Esser Co., Tuscania, London, 1 cs.

PAINTED PAPER

Guaranty Trust Co., Rochambeau, Havre, 3 cs.

CONDENSER PAPER

F. C. Strype, Conte Grande, Genoa, 2 cs.

MISCELLANEOUS PAPER

D. F. Young, Yorck, Bremen, 2 cs.
D. S. Walton & Co., Gripsholm, Gothenburg, 10 bls., 27 rolls.
H. Reeve Angel & Co., Inc., Gripsholm, Gothenburg, 32 bls., 51 rolls.
The Borregaard Co., Inc., Gripsholm, Gothenburg, 853 rolls, 224 bls.
Walker, Goulard, Plehn Co., Gripsholm, Gothenburg, 10 bls.
Kraemer & Co., Gripsholm, Gothenburg, 150 bls.
Japan Paper Co., Conte Grande, Genoa, 2 cs.
T. N. Fairbanks Co., Mauretania, Southampton, 4 cs.
Standard Products Corp., De Grasse, Havre, 20 cs.
Keller, Dorian Paper Co., De Grasse, Havre, 13 cs.
Japan Paper Co., Pr. Johnson, Genoa, 8 cs.

RAGS, BAGGINGS, ETC.

A. Bernstein, Eberstein, Antwerp, 61 bls. bagging.
New York Trust Co., Eberstein, Antwerp, 63 bls. cotton waste.
Irving Trust Co., Eberstein, Antwerp, 125 bls. paper stock.
——Eberstein, Antwerp, 125 lbs. rags.
Castle & Overton, Inc., Fred VIII, Copenhagen, 43 bls. rags.
W. Steck & Co., N. Amsterdam, Rotterdam, 67 lbs. cotton waste.
E. J. Keller Co., Inc., N. Amsterdam, ——, 44 bls. rags.
Banco Com'l Italiane Trust Co., Tagliamento, Genoa, 238 bls. bagging.
Castle & Overton, Inc., London Exchange, Dundee, 257 bls. paper stock.
Brown Bros. & Co., London Exchange, Dundee, 126 bls. paper stock.
Baring Bros. & Co., London Exchange, London, 82 bls. rags.
S. Berkenstein & Sons, London Exchange, London, 44 bls. paper stock.
Castle & Overton, Inc., Arna, Barcelona, 151 bls. rags; 45 bls. bagging.
E. J. Keller Co., Inc., Cameronia, ——, 32 bls. rags.

OLD ROPE

Brown Bros. & Co., Francisco, Newcastle, 68 coils.
Brown Bros. & Co., Exeter City, Bristol, 110 coils.
E. Butterworth & Co., Inc., Arabic, Liverpool, 69 coils.

CHINA CLAY

L. A. Salomon & Bro., Exeter City, Bristol, 120 bags, 110 casks.

WOOD PULP

Castle & Overton, Inc., Milwaukee, Hamburg, 1102 bls. wood pulp, 165 tons.
Atterbury Bros. Inc., Fred. VIII, Oslo, 1100 bls. wood pulp, 200 tons.
Johanson, Wales & Sparre, Inc., Gripsholm, Gothenburg, 1500 bls. sulphate; 160 bls. wood pulp.
Parsons & Whittemore, Inc., Gripsholm, Gothenburg, 900 bls. sulphite; 1050 bls. sulphate.
E. M. Sergeant & Co., Gripsholm, Gothenburg, 748 drs. soda pulp.
M. Gottesman & Co., Inc., Giulia, Sebenico, 2520 bls. wood pulp.
Price & Pierce, Ltd., C. of Fairbury, Walvik, 450 bls. sulphite, 75 tons.
Harriman Bros., Singapore, Hamburg, 340 bls. wood pulp, 51 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Hallaren, ——, 272 bls.

WOOD FLOUR

Corn Exchange Bank, Tonsbergfjord, Flekkefjord, 500 bags, 25300 kilos.
State Chemical Co., N. Amsterdam, Rotterdam, 400 bags.

PHILADELPHIA IMPORTS

WEEK ENDING AUGUST 9, 1930

——, Exeter City, Bristol, 260 tons china clay.
Baring Bros. & Co., Exeter City, Bristol, 212 bls. rags.

(Continued on page 70)

NO LEAKS — NO STREAKS

with the

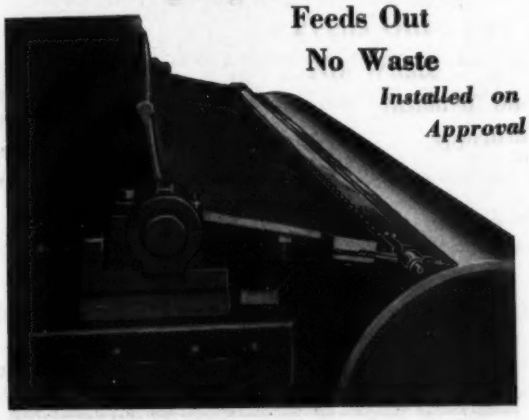
New Lodding Press Doctor

Self Aligning Flexible Blade

Feeds Out

No Waste

Installed on Approval



EACH BLADE GUARANTEED TO FIT—AND GIVE AT LEAST 6 MONTHS SERVICE

LODDING ENGINEERING CO.
WORCESTER, MASS.

Acceptance Financing

INTERNATIONAL ACCEPTANCE BANK, INC.

A Unit of THE MANHATTAN COMPANY

31 Pine Street New York

1864 1930

"EXCELSIOR" FELTS

for every grade of

PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

SOLD BY

BULKLEY, DUNTON & COMPANY
75-77 Duane St., N. Y., and direct

For efficient, economical felt washing

THERE is one certain way to gain better felt washing results, and also effect appreciable washing economies. Make up the washing solution with Oakite and you will find that felts can be cleaned thoroughly in a fraction of the usual time.

Moreover, this safe detergent leaves felts so clean and absorbent that washing is required less frequently.

Write for booklet describing Oakite economies for this and other paper-mill cleaning jobs. Or ask to have our nearest Service Man call and discuss the advantages of using Oakite materials and methods in your work. No obligation.

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the United States and Canada

Manufactured only by
OAKITE PRODUCTS, INC., 48A Thames St., NEW YORK

OAKITE

TRADE MARK REG. U.S. PAT. OFF.

Industrial Cleaning Materials and Methods

Imports of Paper and Paper Stock

(*Continued from page 68*)

J. A. Steer & Co., Exeter City, Bristol, 82 coils old rope.

Tradesmans National Bank, Arna, Barcelona, 88 bls. rags.

BOSTON IMPORTS

WEEK ENDING AUGUST 9, 1930

Brown Bros. & Co., Francisco, Hull, 373 coils old rope; 135 bls. yarn.

G. F. Malcolm & Co., Scythia, Liverpool, 37 cs. tissue paper.

M. Cottesman & Co., Inc., Giulia, Sebenico, 1680 bls. wood pulp.

Johanson, Wales & Sparre, Inc., Giulia, Trieste, 490 bls. wood pulp.

Price & Pierce, Ltd., C. of Fairbury, Walvik, 5250 bls. sulphite, 875 tons; 3000 bls. sulphate, 500 tons.

Bulkley, unton & Co., C. of Fairbury, ——, 6025 bls. wood pulp, 1025 tons.

Brown Bros. & Co., C. of Fairbury, Norrsundet, 5000 bls. sulphate, 1016 tons.

PORTLAND IMPORTS

WEEK ENDING AUGUST 9, 1930

Waterfalls Papermills Co., Giulia, Trieste, 5100 bls. wood pulp.

Price & Pierce, Ltd., C. of Fairbury, Walvik, 3600 bls. sulphate, 600 tons.

Pagel, Horton & Co., Inc., C. of Fairbury, Gefle, 2500 bls. wood pulp, 508 tons.

J. Andersen & Co., C. of Fairbury, Stugsund, 3125 bls. sulphate, 625 tons.

Bulkley, Dunton & Co., C. of Fairbury, ——, 1500 bls. wood pulp, 304 tons.

Forestry College Registration Full

Applications received by the registrar at the New York State College of Forestry, Syracuse University, have filled the possible enrollment for the freshman class. The compilation of applications or admittance to the College is not usually started in July, but this year there turned out to be an unusual demand for forestry courses and the result is that 136 men have been tentatively accepted as students at the Forestry institution.

With the usual falling off in the numbers that actually register there will probably not be more than 125 in the freshman class. This, however, is as many students, with the other three classes, as can be accommodated in the classrooms and laboratories of the Forestry College.

This early filing of applications occurred notwithstanding the fact that requirements for admission have been raised this year. Officials at the College believe that the rapidly expanding reforestation activities of the State and the agitation for opening the Adirondacks to logging operations may have influenced a larger number of students to choose the forestry profession than in former years.

Heavy Duty Box Car Loader

Stephens-Adamson Manufacturing Company, conveyor manufacturers, of Aurora, Ill., have just published two attractively illustrated data sheets, giving descriptions and the specifications of their new heavy duty box car loader and also their standard loader that has been on the market for some time. A new use is featured for these portable loaders. Not only are they used to fill box cars, but they will throw bulk materials far enough to distribute the cargo in the hold of freight boats.

One of these loaders was put on the end of the boom belt conveyor of a self-unloading freight boat and threw material 30 feet to 40 feet beyond the usual discharge point. Data sheets will be sent to interested persons on request.

To Introduce Delthirna Process

The American Delthirna Corporation has recently been formed for the purpose of introducing to paper manufacturers of the United States the Delthirna Rosin Sizing Process, a process which has already been adopted and in use in over 150 paper mills throughout the world. This process is the result of several years of research development by the Papeteries Navarre, of Lyons, France. This process is already in use by leading Canadian mills. Patents were recently granted coving the United States.

The American Corporation has appointed Mansfield, Bolton & Kent, of 501 Fifth Avenue, New York as exclusive selling agents for the United States.

Canadian Hydro-Electric Corporation, Limited, Had High Output in June

The Canadian Hydro-Electric Corporation, Limited, controlled by the International Hydro-Electric System, a division of International Paper and Power Company, produced 205,803,000 kilowatt hours of electric energy in June, a new high record for that month, 34 per cent over June last year, and over double that of June, 1928.

The output of the Corporation for each of the first six months of this year showed progressively higher percentages of increase over the corresponding months of last year.

In the first six months of this year the output of the Corporation was 1,214,112,000 kilowatt hours, 23 per cent over the output of the Corporation in the first six months of 1929, and over double its output in the first six months of 1928.

The output of the Corporation in the twelve months ended June 30 was 2,327,326,000 kilowatt hours, an increase of 33 per cent over the output of the Corporation in the twelve months ended June 30, 1929.

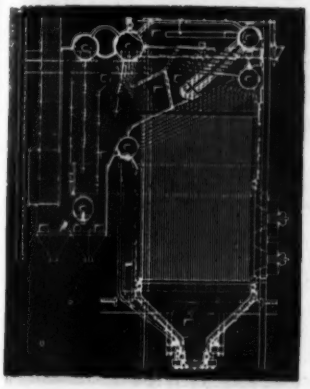
The output of electric energy of all Canadian central station hydro-electric plants other than those owned by Canadian Hydro-Electric Corporation, Limited, in the first five months of this year—the latest figures available—was 2 per cent over the first five months of 1929, while the output of the present plants of Canadian Hydro-Electric Corporation, Limited, increased 21 per cent in the same period.

The output of the plants of Gatineau Power Company, a subsidiary of the Corporation, was 15 per cent in the first five months of this year over the corresponding period of last year, while the output of all other central station hydro-electric plants in the Province of Quebec increased 3 per cent in the same period.

In the first five months of this year the Grand Falls hydro-electric plant of the Corporation produced 57 per cent of the entire production of electric energy of all central station hydro-electric plants in the Maritime Provinces.

Naval Stores Year Book Issued

Gamble's International Naval Stores Year Book, for 1930-31 has just been published. This new edition is the most complete volume issued during the past ten years. The work is invaluable to all interested in rosin, turpentine, etc.; covers the naval stores industry in a most comprehensive manner; and contains many valuable articles and statistical tables. It may be obtained for $3.00, postage paid, from Thomas Gamble, Editor of the *Weekly Naval Stores Review*, Savannah, Georgia.



BADENHAUSEN STEAM GENERATING UNITS

installed in some of the largest pulp and paper mills in the United States and Canada

MAXIMUM STEAM
AT
HIGHEST EFFICIENCY
WITH
LEAST CAPITAL INVESTMENT and OPERATING COSTS

Result:—Enormous savings in cost of pulp and paper produced.

BADENHAUSEN CORPORATION
General Offices and Works
CORNWELLS HEIGHTS (PHILA.), PA.

PAPER MAKERS' DRYER FELTS
TRIUNE and MULTIPLE PLY

Serve every Felt Purpose in an efficient and satisfactory way.

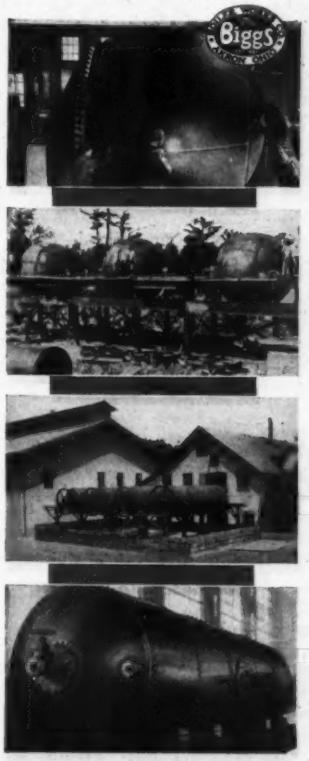
60" to 288"

ENGLISH or BAKER WOVEN

Made in three, four, five and six ply—60" to 214" wide.

FITCHBURG DUCK MILLS
FITCHBURG, MASS.

For 84 Years Makers of Fine Faced Felts For Papermakers



Top—Biggs Welded Rotary Digester. Second—Biggs Riveted Rotary Digesters. Third—Biggs Standard Cylinder Rotary Bleaching Boilers. Bottom — Biggs Tumbling Digester.

Biggs Builds

Welded Globe Rotary Digesters
Riveted Globe Rotary Digesters
Cylinder Rotary Bleaching Boilers
Tumbling Digesters, Welded or Riveted
Stationary Vertical Digesters, Welded or Riveted
Penstocks
Pipe Lines, Welded or Riveted
Welded or Riveted Steel Plate Construction of Every Description.

Write for our folder, "Unusual Steel Plate Construction"

The Biggs Boiler Works Company
East Buchtel Avenue
Akron, Ohio
New York Detroit Chicago

Union Screen Plate Company

Fitchburg, Mass., U. S. A. Lennoxville, P. Q., Canada

UNION BRONZE

SCREEN PLATES FOR FLAT SCREENS
6 SLOTS—5 SLOTS—4½ SLOTS—4 SLOTS—PER INCH

Old Plates Reclosed and Re-cut to Accurate Gauge
Rolled Phosphor Bronze and Copper Plates for Rotary Screens

Sole Manufacturers of the Union Witham Screen Plate Vat and Fastener

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, August 13, 1930.

Trading in the local paper market was moderately active during the past week. Demand for the various standard grades of paper was mostly seasonal. Inquiries for future needs are fairly numerous. Sales forces of the leading paper organizations are looking forward to the autumn campaign with confidence. Prices are generally holding to formerly quoted levels.

Production of news print was maintained at approximately 67 per cent of capacity in the United States and British North America during the week ended July 26, according to information by the News Print Service Bureau. The prevailing demand is gathered by the News Print Service Bureau. The prevailing demand is well up to the average request in the corresponding period last year. The price situation is practically unchanged.

Some improvement was noticed in the paper board market although quotations are still unsatisfactory. The fine paper market is displaying a steady trend with prices generally holding to schedule. The coarse paper market is irregular. Summer specialties are moving in heavy volume. Southern kraft prices are somewhat easier than of late.

Mechanical Pulp

Unfavorable conditions for grinding caused by the long drought are responsible for the stronger undertone exhibited by the ground wood market during the past week. Spot prices are slightly firmer. Shipments against contract are proceeding in a fairly satisfactory manner. Prices are holding to schedule and reports of shading are infrequent.

Chemical Pulp

Midsummer dullness characterizes the local chemical pulp market. Prices on some of the grades have declined slightly. Imported easy bleaching sulphite is now offered at from $2.60 to $2.80; No. 2 strong unbleached at from $2.20 to $2.35; and No. 2 kraft pulp at from $1.55 to $1.65, on dock, Atlantic ports. Domestic easy bleaching sulphite is selling at from $2.55 to $2.75, f.o.b. pulp mill.

Old Rope and Bagging

The old rope market was rather quiet. Demand for both foreign and domestic No. 1 old manila rope was light. There were no further price recessions, however. Mixed rope was fairly steady. The bagging market was rather dull. Demand for No. 1 scrap was mostly along routine lines. Sales of gunny bagging were restricted. Prices remain unaltered, in most instances.

Rags

Signs of improvement were noticed in the domestic rag market. Demand for cotton cuttings was fairly persistent. Roofing grades were more active and mixed rags also displayed a better tendency than of late. Domestic rag quotations were generally steady and unchanged. Importers of foreign rags are receiving a fair volume of inquiries and the outlook for the future is promising.

Waste Paper

Board mill interest in the lower grades of paper stock is being well maintained and the price situation is gradually improving. Offerings are not excessive, as collections have been below normal for some time past. The better grades of waste paper are holding up fairly well. Soft white shavings and white envelope cuttings are in excellent request.

Twine

Business in the local twine market has been marking time and most of the transactions reported have been along routine lines. The twine industry, however, is considered to be in a sound position and a general resumption of active trading is anticipated in the near future. Prices are practically unchanged although there have been reports of concessions on extra large orders.

I. P. Pulpwood Contract Upheld

DENVER, Col., August 13, 1930.—Protests against granting a contract to the International Paper Company for cutting government pulpwood timber in southwestern Colorado have been overruled.

Under a new decision the International Company, with headquarters at New York, will receive 2,000,000 cords of pulpwood for $5,500,000, Allen S. Peck, District Forester, said. The company will have twenty years in which to cut the wood.

The Combined Locks Paper Company of Wisconsin protested against the contract, asserting that its bid was lower than the International and the timber should be split between the two companies.

To Urge Use of Union Watermarked Paper

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., August 12, 1930.—At last Sunday's meeting of the Holyoke Central Labor Union it was voted to instruct the secretary to send a letter to every Central Labor Union or similar body, in the United States urging the use of union watermarked paper. Practically all of the union watermarked bond and ledger papers are made in Holyoke. Edward S. Alden of this city travels in the interest of the sale of such papers throughout the year. The officials of the union said speaking of the matter that they had found that many Central Labor Unions as well as locals had not been using such papers, wholly through carelessness. It is the plan to impress upon them the use of such papers in the future. A similar movement two or three years ago resulted in a large increase in the use of union watermarked papers.

Behr-Manning To Erect Digester Building

[FROM OUR REGULAR CORRESPONDENT]

WATERVLIET, N. Y., August 11, 1930.—A certificate has been filed under state laws by the Behr-Manning Paper Corporation changing the classification of its capital stock from 45,000 shares of preferred stock with $100 par value and 112,500 shares of no par value to 180,000 shares having no par value. The company has also been granted a permit for the construction of a new addition which will entail an expenditure of about $29,000. The new structure when completed will be used as a digester building.

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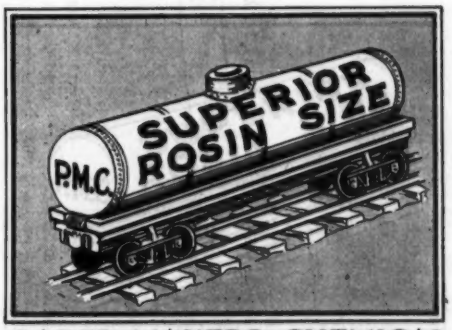

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, August 13, 1930.

BLANC FIXE.—Conditions in the blanc fixe market are practically unchanged. The contract movement is fairly satisfactory. Prices are steady. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Most of the business transacted in the bleaching powder market was along routine lines. Shipments against contract are being maintained at a normal pace for the season. Bleaching powder is still quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—The casein market was quiet. No radical price changes were recorded. Domestic standard ground is quoted at 13½ cents and finely ground at 15 cents per pound. Argentine standard ground is selling at 13½ cents and standard ground at 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda was restricted. Prices are holding to previously quoted levels without difficulty. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is exhibiting a strong undertone. Demand is insistent and the contract movement is well up to average. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Trading in the chlorine market was light during the past week. Contract shipments are going forward in fair volume. Prices are easy. Chlorine is still quoted at from $2.40 to $2.45 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—Further weakness developed in the rosin market. Prices declined slightly. The grades of gum rosin used in the paper mills are now quoted at from $5.40 to $5.45 per 280 pounds, in barrels, at yards. Wood rosin is selling at $4.10 per 280 pounds, in barrels, at Southern shipping points.

SALT CAKE.—Steadiness prevails in the salt cake market. Considering prevailing business conditions demand is quite satisfactory. Prices remain unchanged. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—Although competition is keen in the soda ash market the industry is considered to be in a sound position. Prices are generally being maintained at formerly quoted levels. Contract quotations on soda ash, in car lots, at works, are as follows: in bags $1.32½, and in barrels, $1.55.

STARCH.—The starch market is somewhat firmer, due to the bullish corn market situation. Supplies are moving to the paper mills in seasonal volume. Prices advanced slightly. Special paper making starch is now quoted at $3.77, in bags, and at $4.04 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Demand for sulphate of alumina was fairly brisk during the past week. The contract movement was normal for the time of year. Prices are unchanged. Commercial grades are quoted at from $1.40 to $1.55, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market was moderately active. Prices are steady. Sulphur is quoted at $18 per ton, at mine, on orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $21 per ton.

TALC.—The talc market continues the even tenor of its way. Demand is fairly persistent. Prices are holding to schedule and shading is infrequent. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@	38.00
Bonds	9.00	@	53.25
Writings—			
Extra Superfine	14.00	@	32.00
Superfine	14.00	@	32.00
Tub sized	10.00	@	15.00
Engine sized	8.00	@	11.00
Book, Cased—			
S. & S. C.	6.00	@	7.50
M. F.	5.75	@	7.00
Coated and Enamel	7.50	@	12.00
Lithograph	7.50	@	12.00
Tissues—Per Ream—			
White No. 1	.75	@	1.00
Anti-Tarnish	1.35	@	1.90
Colored	1.00	@	2.00
White No. 2	.75	@	.80
Kraft	1.00	@	1.10
Manila	.75	@	.80
Kraft—			
No. 1 Domestic	5.75	@	6.25
No. 2 Domestic	3.75	@	5.00
Southern	3.75	@	4.75
Imported	5.50	@	7.00
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.75	@	5.25
No. 2 Wood	4.00	@	4.50
Butchers	3.75	@	4.25
Fibre Papers—			
No. 1 Fibre	5.00	@	5.50
No. 2 Fibre	4.75	@	5.25
Common Bogus	2.75	@	3.00
Screenings	3.00	@	3.25
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs.	13.00	@	16.00
Bleached, basis 20 lbs.	15.00	@	16.00
(Delivered New York)			
News, per ton—			
Rolls, contract	62.00	@	—
Rolls, spot	62.00	@	—
Sheets	67.00	@	—
Side Runs	47.00	@	52.00
Boards—per ton—			
News	37.50	@	—
Straw	44.00	@	—
Chip	35.00	@	—
Binders' Boards	65.00	@	70.00
100 Test Jute Liner	37.50	@	40.00
85 Test Jute Liner	47.50	@	50.00
Sgl. Mla. Ll. Chip	47.50	@	50.00
Wood Pulp Boards	75.00	@	80.00
(F. o. b. Mill)			

Mechanical Pulp

(On Dock)

No. 1 Imported—			
Moist	28.00	@	30.00
Dry	30.00	@	32.00
(F. o. b. Mill)			
No. 1 Domestic	26.00	@	30.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	3.00	@	4.25
Easy Bleaching	2.60	@	2.80
No. 1 strong unbleached	2.30	@	2.65
Mitscherlich unbleached	2.40	@	2.85
No. 2 strong unbleached	2.20	@	2.35
No. 1 Kraft	1.65	@	2.15
No. 2 Kraft	1.55	@	1.65
Sulphate—			
Bleached	3.40	@	3.85
(F. o. b. Pulp Mill)			
Sulphite (Domestic)—			
Bleached	2.65	@	4.75
Easy Bleaching Sulphite	2.55	@	2.75
News Sulphite	2.35	@	2.60
Mitscherlich	2.75	@	3.25
Kraft (Domestic)	2.10	@	3.30
Soda Bleached	2.90	@	3.20

Domestic Rags

New Rags

(Prices to Mill f. o. b N. Y.)

Shirt Cuttings—			
New White, No. 1	9.00	@	9.50
New White, No. 2	8.75	@	9.25
Silesias No. 1	7.00	@	7.25
New Unbleached	9.50	@	10.00
New Blue Prints	5.25	@	5.50
New Soft Blacks	5.25	@	5.75
Blue Overall	7.00	@	7.50
Washables	4.50	@	5.00
Fancy	5.25	@	5.75
Mixed Khaki Cuttings	4.75	@	5.25
Pink Corset Cuttings	8.00	@	8.50
O. D. Khaki Cuttings	5.15	@	5.75
Men's Corduroy	3.75	@	4.25
New Mixed Blacks	3.50	@	3.75
Old Rags			
White, No. 1—			
Repacked	5.50	@	6.00
Miscellaneous	4.50	@	5.00
White, No. 2—			
Repacked	3.00	@	3.50
Miscellaneous	2.50	@	2.75
St. Soiled, White	2.00	@	2.15
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	2.00
Black Stockings	3.25	@	3.75
Roofing Rags—			
Cloth Strippings	1.50	@	1.60
No. 1	1.50	@	1.60
No. 2	1.15	@	1.25
No. 3	1.10	@	1.20
No. 4	1.00	@	1.10
No. 5A	.90	@	1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@	3.00
New Mixed Cuttings	2.25	@	2.75
New Light Silesias	6.75	@	7.00
Light Flannelettes	6.75	@	7.25
Unbleached Cuttings	9.25	@	9.75
New White Cuttings	9.00	@	9.50
New Light Oxfords	7.00	@	7.50
New Light Prints	5.25	@	5.75
Old Rags			
No. 1 White Linens	7.25	@	8.00
No. 2 White Linens	5.75	@	6.75
No. 3 White Linens	4.75	@	5.25
No. 4 White Linens	3.00	@	3.50
No. 1 White Cotton	5.50	@	6.25
No. 2 White Cotton	4.50	@	5.00
No. 3 White Cotton	3.00	@	4.00
No. 4 White Cotton	1.75	@	2.10
Extra Light Prints	2.75	@	3.00
Ord. Light Prints	2.15	@	2.40
Med. Light Prints	1.80	@	2.00
Dutch Blue Cottons	2.15	@	2.30
French Blue Linens	2.65	@	2.75
German Blue Linens	2.30	@	2.50
German Blue Cottons	1.90	@	2.00
Checks and Blues	1.75	@	1.90
Lindsay Garments	1.30	@	1.40
Dark Cottons	1.00	@	1.10
Old Shopperies	.90	@	1.00
New Shopperies	1.20	@	1.25
French Blues	1.95	@	2.05

Old Rope and Bagging

(Prices to Mill f. o.b. N. Y.)

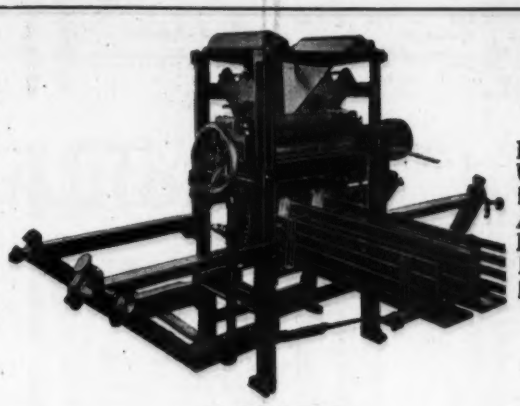
Gunny No. 1—			
Foreign	1.65	@	1.75
Domestic	1.65	@	1.75
Wool Tares, light	1.60	@	1.65
Wool Tares, Heavy	1.60	@	1.70
Bright Bagging	1.60	@	1.70
Small Mixed Rope	1.25	@	1.40
Manila Rope—			
Foreign	3.00	@	3.25
Domestic	3.50	@	3.75
New Burlap Cut	2.25	@	2.50
Hessian Jute Threads—			
Foreign	3.50	@	4.00
Domestic	3.25	@	3.50

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard, white, No. 1	3.00	@	3.25
Hard, white, No. 2	2.40	@	2.55
Soft, white, No. 1	2.65	@	2.75
White envelope cuttings	2.90	@	3.10
Flat Stock—			
Stitchless	1.30	@	1.40
Overissue Mag.	1.30	@	1.40
Solid Flat Book	1.20	@	1.30
Crumpled No. 1	.80	@	.90
Solid Book Ledger	2.00	@	2.10
Ledger Stock	1.30	@	1.40
New B. B. Chips	.35	@	.45
Manilas—			
New Env. Cut.	2.40	@	2.60
New Cuttings	1.50	@	1.75
Extra No. 1 old	1.25	@	1.35
Print	.60	@	.65
Bogus Wrapper	.60	@	.65
Container	.40	@	.50
Old Kraft Machine—			
Compressed bales	1.50	@	1.60
News—			
No. 1 White News	1.77	@	1.87
Strictly Overissue	.50	@	.55
Strictly Folded	.40	@	.45
No. 1 Mixed Paper	.22	@	.27
Common Paper	.15	@	.20

DEPENDABLE



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Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrappings, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	5.00	@	5.50
Southern Kraft	3.75	@	4.00
No. 2 Kraft	3.75	@	4.00
Wood Tag Boards	.04¼	@	.06½
Sulphite Sreenings	.03	@	.03¾
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.40
White Env. Cut-			
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	.30	@	.35
No. 2 Mixed	.25	@	.35
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.60	@	1.65
Krafts	1.30	@	1.40
New Kraft Cuts	1.50	@	1.70
Manila Envelope Cuttings	1.65	@	1.70
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.45	@	.50
Folded News (over-issue	.40	@	.45
Old Newspapers—			
No. 1	.35	@	.40
No. 2	.30	@	.35
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.05	@	.40
Ledgers	.08	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.09	@	.20
Book, M. F.	.05	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.09	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.07	@	.09
Manila Sul., No. 1	.03½	@	.05½
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¾	@	.06¾
No. 2 Kraft	.03¾	@	.04¾
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.03½
Common Bogus	.03¼	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	38.50
Chip Board	32.50	@	35.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.65	@	2.75
No. 2 Hard White	2.30	@	2.50
No. 1 Soft White	2.25	@	2.50
No. 2 Soft White	1.40	@	1.60
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.60	@	.70
Solid Ledger Stock	1.55	@	1.65
Writing Paper	1.05	@	1.25
No. 1 Books, heavy	1.00	@	1.20
No. 2 Books, light	.90	@	1.00
No. 1 New Manila	2.15	@	2.30
No. 1 Old Manila	1.50	@	1.60
Print Manila	.50	@	.60
Container Manila	.45	@	.50
Old Kraft	1.35	@	1.40
Common Paper	.25	@	.35
No. 1 Mixed Paper	.25	@	.30
Straw Board, Chip	.35	@	.40
Binders Board, Chip	.35	@	.45
Corrugated Board	.50	@	.60
Overissue News	.45	@	.50
Old Newspaper	.25	@	.30

Domestic Rags (Old)

White No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
M. G.	6.00	@	—
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.25	@	1.30
Repacked	.80	@	.90
No. 2	.70	@	.75
No. 3 (Roofing)	.30	@	.40
No. 4	.30	@	.40
No. 5A	.70	@	.75
B	.40	@	.60
C	.25	@	.30

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	.06
No. 2 Kraft	.03¾	@	.05
(Less car-freight to Boston)			
Southern Kraft	.03¾	@	.04¼
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls	.009		52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	75.00	@	80.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	—	@	2.25
No. 1 Books, Heavy	1.30	@	—
No. 1 Books, Light	1.05	@	—
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	1.35	@	1.45
Print Manila	.75	@	.80
No. 1 Mixed Paper	.20	@	.25
Overissue News	.45	@	.50
Old Newspapers	.37½	@	.40
Box Board, Chip	.50	@	.55
Corrugated Boxes	—	@	.45

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.50	@	1.65
Domestic	1.50	@	—
Manila Rope—			
Foreign	3.00	@	3.25
Domestic	3.50	@	3.75
Transmission Rope	2.35	@	2.50
Mixed Strings	.90	@	1.00
Jute Wool Strings	.90	@	1.00
Jute Carpet Threads	1.00	@	1.10
Scrap Burlaps	1.25	@	1.40
Scrap Sisal	1.50	@	1.65
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.75	@	2.00
Australian Wool Pouches	2.25	@	3.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.08	@	.08½
Silesias No. 1	.06	@	.06¼
New Unbleached	—	@	.09¼
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.25	@	1.50
No. 2	.90	@	1.00
No. 3	.85	@	.90
No. 4	.75	@	.85

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.95	@	1.00
New No. 1 Shirt Cuttings	8.50	@	9.00
Dutch Blues	2.25	@	2.50
Lace Curtains	4.50	@	4.75
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.20	@	—

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.00	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
White, No. 2	2.00	@	2.25
News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	72.50	@	75.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writ-			
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

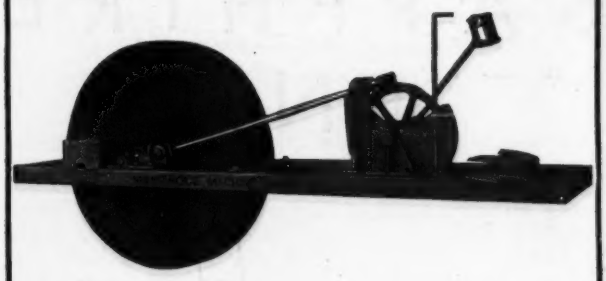
Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¼	@	.10
Fancy Shirt Cuttings	.06	@	.06¼

Advertising matter paged consecutively with text, has been removed here to lessen the bulk of this volume.

Automatic White Water Sampler

(Patented)



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Our Automatic White Water Sampler was designed for measuring these losses and is used in a rapidly growing number of news, fine paper, kraft and board Mills, both at home and abroad.

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